The Semantics of Generics in Dutch and Related Languages

Albert Oosterhof

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The Semantics of Generics in Dutch and Related Languages
by Albert Oosterhof

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To Kathy and Hazel

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Preface and acknowledgements

This book is based on the research carried out for the Ph.D. degree in Germanic Linguistics at Ghent University. The original (unpublished) dissertation, written in 2005–2006, was entitled *Generics in Dutch and Related Languages. Theoretical and Empirical Perspectives*. The new title of the book reflects the study's focus on semantic aspects of genericity. The subtitle has been omitted for reasons of brevity. The present text is shorter than the 2006 manuscript. The original chapter 4 of the dissertation has been omitted. This chapter, which contained a critical discussion of the description of genericity in traditional Dutch grammar books, has been published in a Dutch linguistic journal (cf. Oosterhof 2006b, 2006c), and does not contain information crucial to the rest of the book. The discussion in the later chapters is not based on the concepts of traditional grammar, but primarily draws upon insights from the (formal) semantic literature of the last three decades. The necessary background for the discussion in the later chapters is presented in chapters 1, 2, 3 and 4 (the original chapter 5) of the book.

Another difference in comparison to my dissertation is that in this book certain issues that were not specifically addressed in the thesis, in particular topicality and animacy, have been included in the account of distributional and selectional properties of determiners in generic contexts (chapter 8). In addition, new references to recent work related to the topic of this book have been added (e.g., Behrens 2005; Glasbey 2006; Oosterhof & Coussé 2007).

I would like to thank the series editors for *Linguistik Aktuell/Linguistics Today*, Werner Abraham and Elly van Gelderen, for their comments and advice. My thanks go as well to three anonymous reviewers. I would like to express my gratitude to Kees Vaes at John Benjamins who guided me to the publication of this book. Furthermore, the manuscript benefited from corrections and suggestions made by Jeroen van de Weijer.

I have greatly benefited from discussions with the three supervisors of my Ph.D. project, Johan De Caluwe (Ghent University), Liliane Haegeman (University of Lille III) and Jack Hoeksema (University of Groningen). I am grateful to them for their advice and encouragement over the last years. Furthermore, I have taken into account the comments provided by the other members of the Opposition Committee of the Ph.D. defence, Hans Broekhuis and Jaap van Marle.

List of abbreviations

ADV	Adverb
ASP	aspectual
arg	argument
COMP	Comparative
D-Structure	Deep Structure
EPP	Extended Projection Principle
FUT	Future
GEN	Generic quantifier
Gen	Generic operator (Chierchia 1995)
HAB	Habitual quantifier
HAB	Habitual suffix
Hab	Habitual morpheme (Chierchia 1995)
I-language	Internal language
i-level	individual-level
LF	Logical Form
PF	Phonological Form
PL	plural
pred	predicate
N	neuter
NN	non-neuter
PREP	preposition
PRES	Present
PRT	Particle
±R	±Referential
REFL	reflexive pronoun
SG	singular
s-level	stage-level
S-Structure	Surface Structure
TOP	Topicalization
QR	Quantifier Raising
V2	verb second
3	3rd person

*	syntactically ill-formed
#	semantically ill-formed
%	acceptability subject to variation among speakers of the same language/variety

Introduction

1.1   Kinds and generalizations

Over the past decades, the study of genericity has occupied a central place in natural language semantics. The joint work of the Generic Group,[1] which resulted in the publication of *The Generic Book* (Carlson & Pelletier 1995), was an important milestone in the research on genericity. One of the crucial insights that emerged from this book was that there are "two quite distinct phenomena that have been referred to or classified as 'genericity'" and that these should be distinguished carefully (cf. the introductory chapter of *The Generic Book*, i.e., Krifka et al. 1995). The first phenomenon is the expression of generalizations. This phenomenon is illustrated in (1).

(1)   a.   *Zuurstofmoleculen   bestaan uit twee zuurstofatomen.*
             'Oxygen molecules consist of two   oxygen atoms.'
       b.   *Het zuurstofmolecuul   bestaat uit twee zuurstofatomen.*
             'The oxygen molecule   consists of two   oxygen atoms.'
       c.   *Een zuurstofmolecuul   bestaat uit twee zuurstofatomen.*
             'An oxygen molecule   consists of two   oxygen atoms.'

These sentences do not express specific or isolated facts, but state that the property of consisting of two oxygen atoms applies to oxygen molecules in general. Krifka et al. (1995) call sentences like these *characterizing sentences*.

   The second phenomenon is illustrated in (2). Notice that sentence (2a) is preceded by the symbol '%', which indicates variation among speakers (cf. chapters 4, 5 and 6).

(2)   a. %*Witte   haaien zijn met   uitsterven bedreigd.*
             white sharks are with extinction threatened
             'White sharks are threatened with extinction.'
       b.   *De witte haai   is met uitsterven bedreigd.*
             the white shark is with extinction threatened
             'The white shark is threatened with extinction.'

---

1.   The members of this group were: Gregory Carlson, Gennaro Chierchia, Manfred Krifka, Godehard Link, Francis Jeffry Pelletier and Alice ter Meulen.

Individual sharks cannot die out. The property of being extinct can only be attributed to a species. As a consequence, only species can be threatened with extinction. This means that the underlined noun phrases[2] in (2) refer to a species: they are *kind-referring* or *kind-referential* noun phrases.[3] Predicates such as *met uitsterven bedreigd zijn* are called *kind predicates*. Such predicates have argument places that can be filled only with kind-referring noun phrases. Sentence (3) shows that indefinite singulars cannot occur in the subject position of kind predicates.

(3)   #*Een witte haai   is met uitsterven bedreigd.*
         a   white shark is with extinction threatened

We can conclude from this that indefinite singulars cannot be used as kind-referential noun phrases. This suggests that the semantics of sentence (1c) can be described as follows: the sentence as a whole is a characterizing sentence, i.e., the sentence expresses a generalization, but the subject noun phrase does not refer to a kind.

This illustrates that the fact that a noun phrase can be used in a characterizing sentence does not necessarily imply that the noun phrase is kind-referential. So, the question is whether the definite singular in (1a) and the bare plural in (1b) are kind-referring noun phrases (and if so, whether the kind-referential interpretation is the only available reading; cf. chapter 6). In this perspective, the attested sentences in (4) are interesting.

(4)   a.   *De korenwolf leeft in zuid-Limburg   en   wordt met uitsterven bedreigd.*[4]
               the hamster   lives in south-Limburg and is   with extinction threatened
               'The hamster lives in the south of Limburg and is threatened with extinction.'
         b.   *Het goudkopleeuwaapje   leeft in Brazilië en   is een bedreigde*
               'The golden-headed lion tamarin lives in Brazil   and is a   threatened
               diersoort.
               animal species.'

---

2.   Here, I use the term *noun phrase* as a descriptive notion, corresponding to *nominal constituent*. In chapters 7 and 8, we will assume the hypothesis that NPs are headed by a Determiner Phrase.

3.   One reason to use the notion of *kind*(-*referring noun phrase*) (and not *species*) is that we want to treat the noun phrases in (2) on a par with noun phrases like *vaste telefoons* in (i) below, even though we do not normally use the word *species* to refer to kinds of telephones.

(i)   *Vaste   telefoons   met uitsterven bedreigd.*
         stationary telephones with extinction threatened
         'Stationary telephones threatened with extinction.'
                              (Sentence originates from http://www.zdnet.nl, September 2006)

4.   The sentences originate from www.everythingbio.com, and *Het Nieuwsblad*, February 2005.

Importantly, the left-hand conjuncts of the coordinate structures in (4) correspond to characterizing interpretations, while the right-hand conjuncts contain kind predicates. This shows that the same noun phrase can be combined with a characterizing predicate and, at the same time, with a kind predicate (cf. de Vries 2005 for a discussion of the syntax of such coordinate structures). This is evidence that definite singulars are kind-referring noun phrases not only in kind predicate sentences like (2), but also in characterizing sentences like (1).

Corpus sentences like (5) indicate that the same holds for bare plurals: they (can) refer to a kind in characterizing sentences but can also occur in kind predicate sentences.

(5) <u>*Uilpapegaaien :*</u> *Ze   zijn ongeveer   60 cm lang, leven in Nieuw-Zeeland*
     'Kakapos   : They are approximately 60 cms long, live   in New-Zealand
     en worden bedreigd   met uitsterven.
     and are   threatened with extinction.'

This illustrates that there is a semantic difference between the sentences in (1a) and (1b) on the one hand and (1c) on the other: while the subject noun phrases in (1a) and (1b) (can) receive kind-referential interpretations, this interpretation is not available for the indefinite singular in (1c).

In this book, the semantic differences between different noun phrase types, such as definite singulars, indefinite singulars and bare plurals will be investigated. We will discuss the semantic concepts associated with genericity and describe and account for the subtle semantic contrasts with regard to sentences like those in (1)–(5).

Although the focus of our study is primarily on semantics, this study will also consider relations between syntactic and semantic aspects of characterizing sentences and kind-referential noun phrases and we will demonstrate the relevance of our findings to contemporary syntactic theory.

1.2   Variation among speakers

In the literature, it has been argued that (English) bare plurals *unambiguously* refer to kinds. This position was defended by Chierchia (1998), Cohen (1999, 2002) and Dayal (2006), among others. This hypothesis implies that a bare plural such as *lions* unambiguously refers to a kind not only in kind predicate sentences like (7a), but in characterizing sentences like (6) as well.

(6)   Lions are ferocious beasts.

(7)   a. % Lions are extinct.
       b.   The lion is extinct.

This claim is problematic because there are speakers who do not find sentence (7a) acceptable, while they do accept sentence (6). For example, Gerstner-Link & Krifka (1993: 966, 968) assign a question mark to (7a), while they judge (6) acceptable. If bare plurals unambiguously referred to kinds, we would definitely expect (7a) to be acceptable.

The semantics of English bare plurals has been a major topic in semantic theory for several decades (cf. for example Carlson's 1977 influential dissertation, de Mey 1980, 1981, 1982; Longobardi 1994, 2001; Bosveld-de Smet 1998; Cohen & Erteschik-Shir 2002; Guéron 2006; Glasbey 2006; the collection of papers in Vogeleer 2006). However, the extent and the patterns of variation among speakers with respect to the acceptability of sentences like (6) and (7) has not received much attention in the literature. Yet, it is clear that the issue of variation among speakers is highly relevant to the study of the semantics of sentences like (6) and (7).

An important objective of this thesis is to investigate the variation among speakers of Dutch with respect to their acceptability judgements of characterizing and kind predicate sentences. The acceptability judgements of native speakers will be interpreted as evidence for or against theoretical claims.

1.3   Outline of this book

This book is divided into three parts. The first part is largely concerned with a discussion of the theoretical concepts that are classified as genericity in the specialist semantic literature. Chapter 2 discusses the semantics and some aspects of the syntax of characterizing sentences. An important part of the discussion is devoted to habitual sentences. We provide a number of arguments against the assumption made for example by Krifka et al. that habitual sentences can be treated as a subcategory of characterizing sentences. Chapter 3 is devoted to reference to kinds. The chapter discusses the semantics of a number of sentence types in which kind-referential noun phrases are used.

The second part is devoted to the presentation and discussion of empirical results. In this part the empirical scope of the investigation is extended to include some types of noun phrases that were not discussed in the first part, such as definite plurals (cf. sentences like (8)) and mass noun phrases (cf. sentences such as (9)).

(8)   a.   *%De Neanderthalers waren gebouwd voor een koud klimaat.*[5]
            the Neanderthal   were built   for a   cold climate
            'The Neanderthal were built to survive a cold climate.'

---

[5].   The example sentences originate from http://www.sesha.net/eden/Neanderthalers.asp, and http://www.savethebonobos.org/modules/motionmill (September 2006).

      b. *%Momenteel zijn de bonobo's met uitsterven bedreigd.*
         currently   are the bonobos with extinction threatened
         'Currently, bonobos are threatened with extinction.'

(9)   a.   *Bamboe is sterker   dan staal.*
            'Bamboo is stronger than steel.'

        b.   *Bamboe wordt met uitsterven bedreigd.*
            bamboo is   with extinction threatened
            'Bamboo is threatened with extinction.'

Chapter 4 contains a general discussion of the relevance and the limitations of corpus-based and introspection-based approaches in semantics. One of the issues that will be discussed in chapter 4 is illustrated in (8): these sentences originate from text corpora, but they are judged to be unacceptable by a certain percentage of native speakers. Chapter 5 presents and discusses the results of three corpus studies into the frequencies of a number of characterizing and kind predicate sentences and reports on the results of a questionnaire study into the acceptability judgements of a number of sentence types. The informants of the questionnaire study are native speakers of a number of local varieties spoken in different parts of the Netherlands and Flanders.

The discussion in the first two parts set the scene for the third part, in which we will account for a number of issues in the syntax-semantics interface. Chapter 6 argues that characterizing sentences with bare arguments (i.e., bare plurals and bare mass noun phrases) are ambiguous between an interpretation in which the bare argument refers to a kind and a reading in which it does not refer to a kind. The chapter focuses on Dutch data, but we will also present some arguments in favour of the claim that English bare arguments can be treated on a par with Dutch ones. In chapter 7, we discuss some influential approaches to the syntax and semantics of reference (to kinds) and genericity, in particular Longobardi's (1994, 1996, 2000, 2001, 2005) and Chierchia's (1998) approaches. Our conclusion will be that some aspects of these approaches are not in agreement with Dutch data and in particular with the complexity of the questionnaire data presented in the second part of the thesis. Chapter 8 presents an alternative description of the data. The data will turn out to be more complicated and variable than has been assumed before. This makes it difficult to account for the patterns we find by cross-linguistically valid principles. Some of the notions of economy and optimality proposed in chapter 8 only apply to specific sets of articles in specific languages/varieties. We hope that this book, as well as further research into variation in acceptability judgements, will contribute to the development of universal principles that do justice to the complexity of the data.

PART I

Theoretical perspectives

Generalization

2.1 Introduction

In the introduction, we mentioned that there are two "basic varieties of genericity" (cf. Krifka et al. 1995: 2): (i) the expression of generalizations and (ii) reference to kinds. The expression of generalizations is the result of properties of sentences as a whole. Such generalizing sentences have been called *characterizing sentences* (see Krifka et al. 1995: 2–3). The concept of reference to kinds is best treated as an exclusive property of noun phrases. The idea that there are two subphenomena of genericity, corresponding to characterizing sentences and kind-referring noun phrases was proposed by Gerstner-Link and Krifka (cf. Gerstner-Link & Krifka 1993). Similar distinctions have been made elsewhere; cf. for example Wilkinson (1988), Wilmet (1988) and Declerck (1991).

This chapter and chapter 3 discuss the semantic concepts that are classified as genericity in the semantic literature. Two important questions will be addressed: (i) How can these semantic phenomena be classified? (ii) Is the assumption that there are two types of genericity (cf. Krifka et al. 1995) accurate? The present chapter is devoted to the semantic properties of characterizing sentences. Chapter 3 discusses reference to kinds.

This chapter is organized as follows. Section 2.2 discusses characterizing sentences that express generalizations over objects[1] (i.e., entities/individuals). In section 2.3, I discuss the properties of habitual sentences and argue against the view that habituals can be treated on a par with characterizing sentences. Section 2.4 is devoted to characterizing sentences with indefinite singulars, and argues against Cohen's (2001) hypothesis that such sentences do not receive characterizing ('inductive') interpretations, but refer to rules or regulations. The conclusions of the chapter will be summarized in section 2.5.

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1.   To avoid terminological confusion, I often use the term *direct object* to refer to the syntactic sense of the term *object*.

2.2   Generalization over objects

2.2.1   Overt and implicit adverbial elements

In (1) and (2), examples are given of characterizing sentences. These sentences express quantifications over objects (i.e., entities/individuals).

(1) a. *Zwitsers eten graag chocolade.*
         Swiss   eat ADV chocolate
         'Swiss people like to eat chocolate.'
     b. *De Zwitser eet graag chocolade.*
         the Swiss   eats ADV chocolate
         'The Swiss likes to eat chocolate.'
     c. *Een Zwitser eet graag chocolade.*
         a   Swiss   eats ADV chocolate
         'A Swiss likes to eat chocolate.'

(2) a. *Egels   leiden een eenzaam bestaan.*
         'Hedgehogs lead   a   lonely life.'
     b. *De egel   leidt een eenzaam bestaan.*
         'The hedgehog leads a   lonely life.'
     c. *Een egel   leidt een eenzaam bestaan.*
         'A   hedgehog leads a   lonely life.'

The meaning of sentences like these is approximately the same as the meaning of utterances in which frequency adverbs like *doorgaans* ('generally'), *gewoonlijk* ('usually') and *meestal* ('mostly') are used. So, natural language offers the possibility of expressing generalizations without explicitly specifying the frequency with which the relevant situation is encountered. An influential account of the semantics of characterizing sentences in the recent literature is that such sentences contain an implicit element that is responsible for the quantification over objects. This element is closely related to adverbs like *doorgaans* ('generally') or English *usually* (cf. Krifka et al. 1995: 23–30 and de Swart 1996: 172, among others). In (3b), this is represented by assuming an empty adverbial element in the position that is occupied by the frequency adverbial in (3a).

(3) a. *IJsberen   zijn meestal wit.*
         'Polar bears are mostly white.'
     b. *IJsberen   zijn [$_{ADV}$ ø$_{GEN}$] wit.*
         'Polar bears are   white.'

The plausibility of this idea can be illustrated by attested sentences like the ones in (4) and (5). These sentences show that a characterizing sentence and a sentence with an overt frequency adverb can be used to refer to the same state of affairs. This can be accounted for by assuming that the sentences in (4a) and (5a) contain

quantificational elements that are not phonologically realized, but are closely related to frequency adverbs. Note that the characterizing sentences (4a) and (5a) are similar to the sentences in (4b) and (5b) in that both correspond to generalizations that may admit exceptions.

(4)   a.   Polar bears are solitary animals except for a mother with cubs.[2]
      b.   Polar bears are usually solitary animals except for females with cubs.

(5)   a.   Raccoons are nocturnal animals, but are sometimes seen in the daylight.[3]
      b.   Raccoons are usually nocturnal animals, but rabid raccoons may come out during the day.

2.2.2   Syntactic aspects

Syntactically, we assume that the implicit adverbial element occupies the same position in the tree as overt adverbs. To see that this is plausible, consider (6) below.

(6)   a.   *Zwarte beren zijn bruin   van kleur.*
          'Black bears are brown in   color.'
      b.   *Zwarte beren zijn soms   bruin van kleur.*
          'Black bears are sometimes brown in   color.'

Sentence (6a) is a characterizing sentence. It contains an implicit quantificational element $ø_{GEN}$, which is responsible for the characterizing interpretation. In (6b), a frequency adverb is inserted. As a result, the characterizing reading disappears and the sentence receives the following reading: '*Some* black bears are brown in colour'. The most straightforward assumption about the syntactic position of the frequency adverb in (6b) and the implicit adverbial element in (6a) is that they occupy the same unique position. Thus we predict that one and the same sentence cannot contain an adverb like *soms* in (6b) and, at the same time, an implicit quantificational element $ø_{GEN}$.

   Cinque (1999) presents empirical and conceptual evidence for locating adverb phrases (AdvPs) in the specifier positions of functional projections. He observes that cross-linguistically the number, type and order of the different classes of AdvPs match the number, type and order of morphemes that realize a number of functional heads above the V(erb)P(hrase). Cinque (2004: 683)

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2.   These sentences originate from www.fuzzyphoto.com/polarbear.html and www.bearden. org (July 2006).

3.   These sentences originate from http://silver.emerson.u98.k12.me.us and http://experts. about.com (July 2006).

puts it as follows: "Much as inflectional morphology, functional particles, and auxiliaries were (…) considered to be the overt manifestation, in head format, of the functional portion of the clause, AdvPs (…) could be seen as the overt manifestation of the same functional distinctions in specifier format." Cinque (1999: 99) assumes that overt as well as implicit adverbial elements occupy the specifier positions of functional projections (cf. the discussion above). He writes: "I will assume that generic sentences involve a generic operator in the Specifier position of an <u>aspectual</u> head" (my emphasis, AO).

The label 'aspectual' is problematic, since there is no one-to-one relation between aspectual information and characterizing interpretations. Generalizations about objects are expressed independently of the temporal and aspectual properties of the sentences. As is widely known, characterizing interpretations are (particularly) compatible with the simple present, as was illustrated for Dutch in (1) and (2) and for English in (4a) and (5a) above. However, other constructions and tenses can be used under characterizing readings as well. Some example sentences are presented in (7).

> (7) a. *(Echte) Rotterdammers zitten op dit moment tv   te kijken*
>   (real) Rotterdammers sit   at this moment TV to watch
>   *(want   Feyenoord speelt de finale van de Champions League).*
>   (because Feyenoord plays the final of   the Champions League)
>   'At this moment, (real) Rotterdammers are watching TV (because
>   Feyenoord is playing the Champions League final).'
>   b. *In deze tijd van het jaar zijn egels   een vetreserve*
>   in this time of   the year are hedgehogs a   reserve of fat
>   *aan het opbouwen*
>   building up
>   'In this time of year, hedgehogs are building up a reserve of fat.'
>   c. *Katholieken hebben gisteravond   (heus) geen vlees gegeten*
>   catholics   have   yesterday evening ADV   no   meat eaten
>   *(want   het was Goede Vrijdag).*
>   (because it   was Good Friday)
>   'Last night, Roman Catholics did not eat meat (because it was Good Friday).'
>   d. *Het sneeuwklokje bloeide   vorige   maand.*
>   the snow drop   bloomed last   month
>   'Snow drops bloomed last month.'

These sentences can receive characterizing readings. Yet, the constructions in (7a) and (7b) express progressive aspect: they indicate that the action is taking place right now. Furthermore, (7c) contains a present perfect tense and (7d) contains a simple past tense. We can conclude that the characterizing reading is possible with a range of constructions and tenses.

This observation provides an argument against a claim made in the introduction to *The Generic Book*:

> "Characterizing sentences express regularities and do not report particular events. A roughly corresponding linguistic distinction is the one between stative and nonstative (or dynamic) sentences. (…) If the language under consideration has a linguistic form which excludes stative predicates, as the progressive in English does (…), this form will typically exclude characterizing sentences as well."
>
> (Krifka et al. 1995: 12)

Similar claims have been made in many other publications (for example Gerstner-Link & Krifka 1993, Dahl 1995 and Marelj 2004: chapter 5). The example sentences in (8) originate from Krifka et al. (1995: 12). Such sentences usually receive a non-characterizing reading. However, this does not seem to be a linguistic fact. In contexts in which, for example, almost all inhabitants of a country or a town are doing the same thing, sentences like (8a–c) are true and acceptable.

(8) a. The Italian is drinking wine with his dinner.
     b. An Italian is drinking wine with his dinner.
     c. Italians are drinking wine with their dinner.

Some attested sentences illustrating the same point are given in (9).

(9) a. On this Memorial Day, Americans are paying tribute to men and women who have died in military service to their country.[4]
     b. The international crisis that broke in the wake of the tragedy of 11 September has entered a very delicate phase. Public opinion is understandably alarmed. <u>Italians are watching this debate by their representatives with legitimate concern.</u>

These sentences (can) get characterizing readings, even though they have progressive aspect.

Let us now consider sentence (10) (from Krifka et al. 1995: 12).

(10) Luigi is drinking wine with his dinner.

Of course, this sentence does not receive a characterizing reading (i.e., the sentence does not express a generalization about objects). The reason is that the sentence does not contain a common noun phrase. As a consequence, there is no set of objects to quantify over. A more important point is that the sentence cannot receive a habitual reading. Habitual interpretations are (normally) expressed by sentences with a simple present tense, as illustrated in (11).

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4. The sentences originate from www.topix.net/city/rothbury-mi, www.iraqwatch.org/government/Italy/Italy-mfa-Berlusconi-092502.htm and http://news.scotsman.com (July 2006).

(11)   Luigi drinks wine with his dinner.

Apart from a difference in tense, sentences (10) and (11) are identical.

These observations illustrate that while generalization about objects is not dependent on which temporal or aspectual markers appear in the sentence (cf. sentences (7)–(9)), habituality is. Our conclusion must be that while there is a clear relation between habituality and tense/aspect, there is no clear relation between tense/aspect and the expression of generalizations over objects. We return to this issue in the next section.

Recall that we have assumed that the implicit adverbial ø$_{GEN}$ (cf. (3b)) is generated in the specifier of a functional projection. However, nothing in this study hinges on this choice, and there are alternatives to this approach. Hoeksema (1999) argues for the view that some adverbial elements are (functional) heads, without specifier positions associated with them. An argument against the assumption that the implicit adverbial element corresponds to a specifier position is that the head position of the relevant projection is not occupied by an overt category (cf. Hoeksema 1999 for a similar argumentation applied to other adverbial elements). It does not make sense to relate the relevant head position to an aspectual morpheme (as is done in the literature), because we have seen that there is no clear relation between aspect and generalization about objects.[5]

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5.   This was illustrated by Dutch and English example sentences. It could be the case that in other languages the situation is different. A potential counterexample is 'the Slavic generic marker -va-', described in Filip & Carlson (1997: section 2). They write:

"From hrát 'to play', 'to be playing' we get the habitual verb hrávat meaning something like 'to play usually, often, sporadically, habitually' or 'to tend to play'. (…) [T]he generic suffix may freely co-occur with any tense, PAST, PRESENT or FUTURE as illustrated in [i].

(i)   a.   *Karel   hrá-va-l   hokej*
              Charles   play-HAB-PAST   hockey
              'Charles used to play hockey' (…)
       b.   *Karel   hrá-vá   hokej*
              Charles   play-HAB.PRES   hockey
              'Charles usually plays hockey'
       c.   *Karel   bude   hrá-va-t   hokej*
              Charles   AUX.FUT.3SG   play-HAB-INF   hockey
              'Charles will usually play hockey' " (emphasis deleted, AO)

These sentences illustrate that the 'generic suffix' expresses habituality. The sentences can be interpreted as an argument that habituality is related to a head position occupied by an overt category. This does not contradict our claim that the head position corresponding to GEN is not occupied by an overt morpheme.

To illustrate the syntactic structure of characterizing sentences, the structure of sentence (12) is represented in (13). We refer to the relevant functional projection in which the adverbial element ø_GEN is located as F1P.

(12) *IJsberen   hebben [_ADV ø_GEN] krachtige poten.*
      'Polar bears have   strong   paws.'

(13)

```
                          TP
                    ┌──────┴──────┐
                 ijsberen          T'
                            ┌──────┴──────┐
                            T             F1P
                       ┌────┴────┐    ┌────┴────┐
                       v         T   GEN        F1'
                  ┌────┴────┐             ┌──────┴──────┐
               hebben       v            F1            vP
                                                  ┌─────┴─────┐
                                             <ijsberen>       v'
                                                        ┌─────┴─────┐
                                                   <hebben v>       VP
                                                             ┌───────┴───────┐
                                                         krachtige poten <hebben>
```
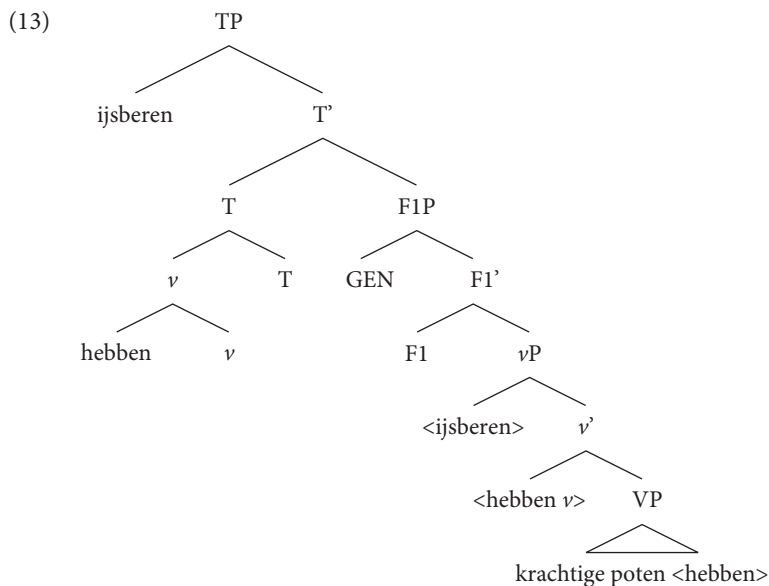
Recall that frequency adverbs like *meestal* in (3a) occupy the same position as the implicit adverbial element in (13). The structure in (13) is simplified. For example, it does not represent other adverbial positions, such as the positions of adverbs of place, manner and negation.

The projection F1P, which hosts the implicit adverbial element in its specifier position, is located between TP ('Tense Phrase') and *v*P ('light verb phrase') (cf. for example Adger 2003: 104–243). In this way we generate the correct surface word order. We assume that the direct object is generated as a sister of the verbal head and that Dutch does not require object movement to a VP-external position. This assumption is consistent with recent work by Vicente (2005), who argues that in Dutch it is possible for objects to check case and agreement features inside the VP. Furthermore, we assume that the base subject position is the specifier of *v*P and that the subject moves to the specifier of TP (see Van Craenenbroeck & Haegeman 2007 for a different view on Dutch so-called V2–sentences with an initial subject). The verb, which is base-generated as head of the VP, raises and adjoins to 'little' *v*. Subsequently, this 'little *v* complex' raises to T. We mark the position from which movement has taken place by enclosing a copy of the moved element in angled brackets.

2.2.3   Semantic aspects

How can the semantics of characterizing sentences be logically represented? We illustrate this by constructing a logical representation of the sentence in (12). This sentence represents one of the possible interpretations of bare plurals. Some other possibilities are illustrated in (14).

(14)   a.   *Er   zijn ijsberen   op het eiland.*
              'There   are   polar bears on the island.'
        b.   *IJsberen   hebben meestal krachtige poten.*
              polar bears have   usually strong   paws.
              'Polar bears usually have strong paws.'
        c.   *IJsberen   hebben altijd   krachtige poten.*
              polar bears have   always strong   paws
              'Polar bears always have strong paws.'

In (14a), in which *er*('there')-insertion has taken place, the bare plural receives an existential reading. Sentence (14b) expresses that *most* polar bears have strong paws (cf. (3a) for a similar sentence). Sentence (14c) expresses that *all* polar bears have this property.

The sentences in (12) and (14) illustrate that the quantificational force of bare plurals is determined by other elements in the sentence. This can be accounted for in the framework presented by Heim (1982, 1983). Heim (1983: 179) summarizes her analysis of indefinite singulars as follows: "The logical analysis of an indefinite singular is just a proposition with a variable free in it. (…) "[A] cat" corresponds to something like (…) cat(x)". I follow Diesing (1992: 16) in assuming that bare plurals (under one of their readings) introduce variables into the logical representation just like indefinite singulars. If we assume this to be correct, the bare plural subject of (12) can be represented as **ijsbeer**(x). Thus, *ijsberen* introduces a variable and provides a restriction to it through a predicate of being a polar bear.

Our representation of the implicit adverbial element ø$_{GEN}$ rests on the analysis in Krifka et al. (1995: 23–30). Krifka et al. (1995) assume that this element can be represented as a generic quantifier GEN. This generic quantifier binds the variable x that is free in the proposition **ijsbeer**(x).

After these two steps (the introduction of a variable and the representation of the adverbial element), we arrive at the incomplete representation in (15).

(15)   GEN[x] [**ijsbeer**(x)]…
        'In most cases in which x is a polar bear…'

The paraphrase given in (15) is based on the assumption that the semantics of the generic quantifier GEN is similar to the semantics of frequency adverbs like *meestal* ('mostly').

The variable x, which is introduced into the logical representation by the bare plural *ijsberen*, can in principle also be bound by other quantificational elements. We assume, for example, that in (14b) there is a quantifier that corresponds to the frequency adverbial *meestal*. Another possibility is that the variable x is bound by an existential quantifier (as in (14a)). In the literature (cf. in particular Heim 1982) binding by an existential quantifier is considered as the 'default' option: if the indefinite noun phrase occurs in a position where there is no operator to bind the variable, it is bound by insertion of an existential quantifier (cf. Diesing 1992 for an influential hypothesis regarding the syntactic positions in which this is the case). This existential quantifier binds the free variables left in the text. This default operation is known in the literature as existential closure.

All interpretations in which a bare plural introduces a variable are essentially interpretations in which the bare plural lacks quantificational force of its own. Such bound variable readings of noun phrases should be distinguished carefully from kind denotations (cf. chapter 3).

Krifka et al. (1995) assume that, apart from the generic quantifier, the representation of a characterizing sentence consists of two parts: a *restrictor* and a *nuclear scope*. It is for this reason that GEN is called a *dyadic operator* (cf. Krifka et al. 1995: 23–30). The restrictor and the nuclear scope can be considered as sets of conditions. The conditions in the restrictor restrict the objects which the expression quantifies over. In (15), [**ijsbeer**(x)] is the restrictor. This incomplete representation corresponds to a generalization about polar bears. The nuclear scope specifies the properties that are ascribed to these objects. Sentence (12) attributes the property of having strong paws to polar bears. This can be represented by assuming the following nuclear scope: [**krachtige-poten**(y) & **hebben**(x, y)] (cf. also (16)).

(16)   GEN[x] [**ijsbeer**(x)] [**krachtige-poten** (y) & **hebben**(x, y)]

Notice that the nuclear scope contains a free variable y. We follow Heim (1982: 138) in assuming that there is a second subrule of existential closure (cf. above), which adjoins a quantifier ∃ to the nuclear scope of every quantifying element. This existential quantifier binds the free variable introduced by the bare plural *krachtige poten*, as represented in (17).

(17)   GEN[x] [**ijsbeer**(x)] ∃y[**krachtige-poten** (y) & **hebben**(x, y)]
        'In most cases in which x is a polar bear, x has strong paws.'

Notice that the subject as well as the object bare plural introduces a variable into the representation. These noun phrases get different interpretations as a result of the partition of the underlying semantic material in a restrictor and a nuclear scope.

In sentence (12), the generic quantifier takes sentential scope. This is not always the case, however. A sentence like (18) (from Cohen 2001) exhibits a scope ambiguity: "One reading is that, in general for any given madrigal, there is exactly one music fan with whom it is popular; the second reading is that there is exactly one music fan who likes madrigals" (Cohen 2001: 4). The second reading can be dealt with by assuming that the quantificational noun phrase *exactly one music fan* can be raised (at the invisible level of Logical Form) to a position from which it takes scope over the generic quantifier.[6]

(18)   Madrigals are popular with exactly one music fan.

2.3   Habitual sentences

In much recent work on genericity, the assumption is made that habituals like (19) can be treated as a subcategory of characterizing sentences (cf. for example Krifka et al. 1995: 30–36).

(19)   a.   *Marie drinkt bier.*
             'Marie drinks beer.'
        b.   *Jan gaat te voet naar het werk.*
             John goes on foot to   the work.
             'John walks to work.'

At first sight, this hypothesis is attractive. A similarity between habituals and characterizing sentences is that their semantics seems to be approximately the same as the meaning of utterances in which frequency adverbs like *doorgaans* ('generally') and *meestal* ('mostly') are used. This was illustrated for characterizing sentences in 2.2.1. In (20), examples are given of sentences with overt frequency adverbs, which seem to express (almost) the same generalization as the habitual sentences in (19).

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6.   Chierchia (1995: 193) assumes that wherever the GEN operator is at S-structure, it remains free to select its nuclear scope at LF-structure. Chierchia writes: "The [restrictor] is then drawn from the material which is external to the [nuclear scope] (…)". This must be read as follows: material to the left of the LF-position of GEN goes into the restrictor and material to the right of it goes to the nuclear scope (cf. Sánchez-Valencia 1996). Sentences like (18) seem to be a problem for this assumption, because *exactly one music fan* (under the reading in which it takes wide scope) must be adjoined to a position from which it takes scope over GEN, i.e., 'to the left of GEN'. However, under Chierchia's proposal material to the left of GEN goes into the restrictor. In the case of (18), this does not yield the desired result. The question of how exactly the semantic material can be divided into a restrictor, a nuclear scope and material which takes scope over GEN remains unanswered at this point.

(20) a. *Marie drinkt doorgaans bier.*
         Marie drinks generally   beer
         'Marie generally drinks beer.'
      b. *Jan gaat meestal te voet naar het werk.*
         Jan goes mostly on foot to   the work
         'Jan usually walks to work.'

For example, both sentences (19b) and (20b) get the following interpretation: In most situations in which Jan goes to work, he walks.

If generalizations over objects and generalizations over situations can be expressed by the same overt frequency adverbs, it seems to be an attractive hypothesis that the generalizations in (19) are the result of the presence of the same generic quantifier GEN as in sentences like (20). We could represent the example sentence in (19a) as in (21). The variable s runs over situations. C is a 'context function' (cf. Chierchia 1995, Greenberg 2002 and Rimell 2004), which restricts the quantification to 'contextually relevant situations'.

(21) GEN[s][C(s)][**drinken**(**marie**,**bier**)]
         'In contextually relevant situations, Marie drinks beer.'

2.3.1   Arguments against a uniform analysis of characterizing and habitual sentences

As attractive as a uniform account of characterizing and habitual sentences may appear at first glance, it has some important drawbacks. It was already observed by Dahl (1985: 99) that habitual sentences "differ from generic [i.e., characterizing] ones by their lack of lawlikeness". Cinque (1999: 99) illustrates this semantic difference by observing that "a sentence like *Questa macchina fa i 280 km all'ora* 'this car runs 280 km per hour' may be uttered appropriately even if the car has never been on the road." The same point can be made for Dutch (cf. (22)).

(22) *Deze auto gaat 280 km per uur.*
         'This car   runs 280 km per hour.'

It is, however, beyond doubt that for (23) to be true, a substantial proportion of mopeds should run 25 km per hour. The fact that habituals and characterizing sentences are semantically different in this respect is a problem for a uniform treatment of habituals and generics.

(23) *Snorfietsen gaan 25 km per uur.*
         'Mopeds   run   25 km per hour.'

In the following sections, I will discuss three other arguments against the uniform account of habituals and characterizing sentences.

2.3.1.1   *Sentences with two frequency adverbs*

A first argument against a uniform approach is illustrated in (24).

(24)   a.   *IJsberen   eten gewoonlijk soms   zeehonden.*
         polar bears eat   normally   sometimes seals
         'Normally, polar bears sometimes eat seals.'

   b.   *Of   men het leuk   vindt of niet sociale wetenschappers zijn*
         whether one it pleasant finds or not social   scientists   are
         doorgaans meestal geïnteresseerd in het algemene terwijl historici zich
         generally mostly interested   in the general   while historians REFL
         meer richten   op het unieke.[7]
         more concentrate on the unique
         'Whether one likes it or not, generally social scientists are usually more
         interested in the general, while historians concentrate on the unique.'

   c.   *(…) dus zullen katers   het onderling gewoonlijk soms   niet*
              so   will tomcats it   mutually usually   sometimes not
         zo goed kunnen vinden.[8]
         so well get   along
         '(…) so, usually tomcats sometimes do not get along with each other.'

In these sentences, two frequency adverbs are used. In the most natural interpre-
tations of these sentences, the first adverb corresponds to a generalization about
objects, while the second expresses quantification over situations.[9] For example,
the interpretation of (24a) can be paraphrased as follows: In most cases in which

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7.   This sentence originates from Boekestijn, Arend Jan. 2003. 'Ook in België zijn de relaties tus-
sen historici en sociale wetenschappers moeizaam.' Recensie van Prof. Els Witte. *Over Bruggen
en Muren, Hedendaagse Politieke Geschiedenis en Politieke Wetenschappen in België* (1945–2000).
In: *Tijdschrift voor Geschiedenis* 116, 4: 651–653.

8.   www.dieren-rassen.nl/katten/halflangharige-rassen/noorse-boskat (July 2006).

9.   There are adverbs which are constrained in the way in which they can be used. While sen-
tence (ia) is acceptable, (ib) is odd. The sentences in (23)–(26) show that the most natural inter-
pretation is one in which the first adverb (i.e., *dikwijls* in (ib)) corresponds to a generalization
about objects and the second expresses a temporal generalization. As a consequence, in (ib)
dikwijls is in a position which corresponds to generalization about objects. Probably, the reason
that sentence (ib) is problematic is that *dikwijls* normally expresses generalizations about situ-
ations.

   (i)   a.   *Tsjechen drinken doorgaans dikwijls bier.*
            Czechs   drink   generally often   beer
            'Generally, Czechs often drink beer.'
      b. *?#Tsjechen drinken dikwijls doorgaans bier.*
            Czechs   drink   often   generally beer

x is a polar bear, x eats seals in some situations s (which amounts to saying that most polar bears sometimes eat seals). This can be analysed by assuming another functional head hosting adverbial elements: F2P. For example, while *gewoonlijk* in (24a) is located in the specifier of F1P, *soms* is located in the specifier of F2P. F1P and F2P show the following relative order: F1P > F2P[10], where ' > ' indicates that F1P is generated higher in the tree than F2P.

A similar observation is made by Van Langendonck (1971). According to Van Langendonck (1971: 363), sentences (25) and (26) are synonymous.

(25) *Moeders zijn soms   dikwijls te   zacht.*
     mothers are   sometimes often   too soft.
     'Some mothers are often too soft.'

(26) *Sommige moeders zijn dikwijls te   zacht.*
     'Some   mothers are often   too soft.'

Note that the most natural interpretation of (27), in which the order of the adverbs is reversed, is an interpretation in which *dikwijls* corresponds to a generalization about objects, while *soms* expresses quantification over situations.

(27) *Moeders zijn dikwijls soms   te   zacht.*
     mothers are often   sometimes too soft.
     'Many mothers are sometimes too soft.'

If the hypothesis that generalizations about objects and generalizations about situations (i.e., habituality) are associated with adverbs in different positions is correct, we predict sentences like (28) to be ambiguous.

(28) *Amsterdammers gaan soms   op de fiets naar hun   werk.*
     Amsterdammers go   sometimes on the bike to   their work
     'Generally, people from Amsterdam sometimes go to work by bike.'
     'Some people from Amsterdam usually go to work by bike.'

---

10. I do not exclude the possibility that there are counterexamples to this claim. For example, the sentence in (i) receives an interpretation in which *in het weekend* expresses a temporal generalization, while the adverb *doorgaans* corresponds to a generalization about Czechs. Observations about (diachronic changes in) the order of the adverbs *ooit* ('ever'), *nog/al* ('still'/'already') *wel* ('probably') and *eens* ('once') led Hoeksema (1999: 10) to the more radical conclusion that the idea that the order of functional projections is universally invariant should be rejected.

(i) *Tsjechen drinken in het weekend   doorgaans bier.*
    Czechs   drink   in the weekends   generally beer
    'Generally, Czechs drink beer in the weekends.'

Under the first reading, the adverb is located in Spec,F2P and refers to situations. Under the second reading, *soms* is in Spec,F1P and expresses the notion that the property of going to work by bike is true of some people from Amsterdam. It should not be possible for one adverb to have both functions at the same time, i.e., the following interpretation of (28) should be impossible: Some people from Amsterdam sometimes go to work by bike. This prediction is borne out.

Based on this discussion, we can now provide a representation of the syntactic structure of sentences such as (24a), repeated as (29).

(29)   *IJsberen eten gewoonlijk soms zeehonden.*

The structure of this sentence is given in (30).

(30)

```
                              TP
                     ┌─────────┴─────────┐
                 ijsberen               T'
                              ┌──────────┴──────────┐
                              T                    F1P
                         ┌────┴────┐          ┌─────┴─────┐
                         v         T     gewoonlijk      F1'
                    ┌────┴────┐          GEN        ┌─────┴─────┐
                  eten        v                     F1         F2P
                                                         ┌──────┴──────┐
                                                       soms           F2'
                                                       HAB       ┌─────┴─────┐
                                                                 F2         vP
                                                                      ┌──────┴──────┐
                                                                <ijsberen>         v'
                                                                           ┌───────┴───────┐
                                                                        <eten v>          VP
                                                                                    ┌──────┴──────┐
                                                                               zeehonden <eten>
```
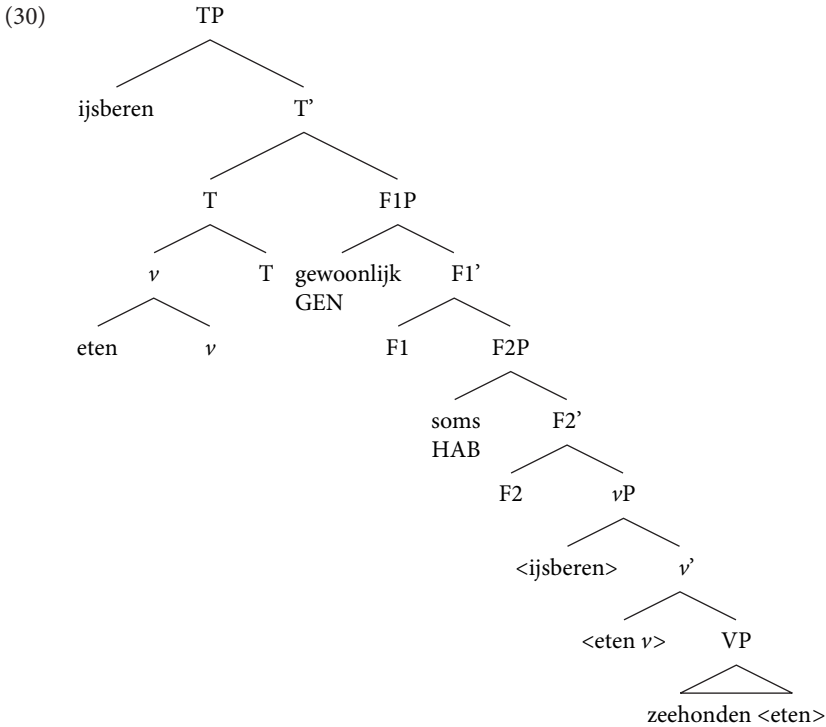
Let us now return to the crucial point: If there are two positions for overt frequency adverbs, it is reasonable to assume that there are two different loci for implicit adverbials as well. We assume that these adverbials semantically correspond to GEN and HAB, as indicated in (30).

2.3.1.2   *The relation between habitual/characterizing readings and*
         aspectual information

The second argument against a uniform account of habitual and characterizing
sentences has already been alluded to in 2.2.2. While characterizing interpreta-
tions are possible in a variety of aspectual(/temporal) contexts (cf. section 2.2.1
and 2.2.2), there is a clear relation between habituality and aspect. While in (31)
the habitual interpretation seems to be the most probable one, this reading is
impossible in sentences such as (32).

(31)   *Mijn broer   speelt viool.*
       my   brother plays   violin
       'My brother plays the violin.'

(32)   *Mijn broer   is viool   aan het spelen.*
       my   brother is violin playing
       'My brother is playing the violin.'

In this respect, the habitual quantifier HAB differs from the generic quantifier
GEN. Whether the presence of HAB is possible depends on the aspectual context, but
GEN seems to be unrestricted (or far less restricted) in this respect. It is unclear how
this can be accounted for if we do not assume a separate habitual operator.

How can the relation between HAB and aspect be formalized? A possible
account can be based on Chierchia (1995: 197):

> "Genericity manifests itself overtly in the aspectual system of a language. In
> English the simple present (…) has a predominant habitual interpretation.(…) In
> other languages, genericity is marked by explicit aspectual morphemes. (…) [W]e
> can assume that all languages have a distinctive habitual morpheme (say, Hab)
> which can take diverse overt realizations. In the spirit of much recent work on the
> structure of inflection, this morpheme can be taken to be a functional head (…).
> The semantically relevant characteristic of this morpheme is that of carrying an
> agreement feature requiring the presence of the **Gen**-operator in its Spec."

Chierchia does not make a clear distinction between habituality and genericity. A
consequence of the evidence we have presented so far is that it is more plausible
that the relevant aspectual morpheme requires the presence of HAB (and not of a
'**Gen**-operator') in its specifier. This accounts for the close relationship between
the habitual quantifier and the aspectual properties of the verbal predicate.

2.3.1.3   *Indefinite singular direct objects*

A third argument against a uniform treatment of habitual and characterizing
sentences is taken from Rimell (2004). Rimell observes that (33a) can receive the
ordinary habitual reading, which can be paraphrased as follows: In appropriate

situations which contain Mary, she will normally drink beer (cf. Krifka et al. 1995: 42). This reading is not available in (33b). Note that there is a special habitual reading which is available to (33b). This reading can be paraphrased as follows: There is a kind of beer (e.g., Heineken), which Mary normally drinks.

(33) a.   Mary drinks beer.
      b.   Mary drinks a beer.

Importantly, the characterizing sentences in (34), in which an indefinite singular is used in direct object position, just like in (33b), do receive the ordinary characterizing reading.

(34) a.   The elephant has a tail.
      b.   Beavers build a lodge to live in.

So, indefinite singulars are acceptable in the direct object position of characterizing sentences, but seem to be problematic in the direct object position of habituals. This is rather unexpected if one assumes that characterizing and habitual sentences can be treated on a par (cf. Rimell 2004).

The same point can be made for Dutch. Sentence (35a) can receive the same habitual interpretation as (33a). This reading is not possible in (35b).[11]

(35) a.   *Marie drinkt bier.*
           'Marie drinks beer.'
      b.   *Marie drinkt een biertje.*
           Marie drinks a   beer-dim
           'Marie drinks a beer.'

Yet, sentence (36a) as well as (36b) can get the ordinary characterizing reading.

(36) a.   *De olifant   heeft een staart.*
           'The elephant has   a   tail.'

---

11.   This does not exclude the possibility that (slightly) different sentences such as (i), which contains an adverb that is absent in (35b), are acceptable (under the relevant reading). This could be a counterexample to Rimell's observation. Note, however, that there is a semantic contrast between sentence (i) and the acceptable sentence in (35a). Sentence (35a) can be paraphrased as follows: In relevant situations, Marie drinks beer. So, the sentence expresses a generalization about situations. Sentence (i) (or at least one of its interpretations) can be paraphrased as follows: In relevant situations in which Marie drinks beer, she likes it. This seems to be a generalization not only about situations, but also about beer, i.e., a characterizing interpretation. This could account for the well-formedness of (i).

(i)   *Marie drinkt graag een biertje.*
       Marie drinks ADV a   beer-DIM
       'Marie likes to drink a beer.'

b.   *Bevers   bouwen   een burcht.*
'Beavers build   a   lodge.'

Rimell (2004) argues that these data cannot be dealt with if the habitual quantifier is similar to the generic quantifier GEN. Recall that the idea that GEN can be seen as an implicit adverbial element closely related to adverbs like *meestal* ('mostly') accounts for the fact that characterizing sentences can be paraphrased by such overt adverbs (cf. (37)).

(37)   *Bevers   bouwen meestal   een burcht.*
beavers build   mostly   a   lodge
'Usually, beavers build a lodge.'

So, it is not surprising that both (36b) and (37) are well-formed and express a generalization about beavers. The problem is, however, that we cannot extend this analysis to habitual sentences.

If an overt adverb is inserted in (35b), as illustrated in (38), the sentence becomes fully acceptable.

(38)   *Meestal drinkt Marie een biertje.*
Mostly   drinks Marie a   beer-DIM
'Mostly, Marie drinks (a) beer.'

While the overt adverb in (38) is fully compatible with an indefinite singular direct object, HAB is not. This suggests that the habitual quantifier is not as closely related to overt adverbs as is sometimes assumed. Our conclusion must be that the behaviour of HAB differs from that of the generic quantifier GEN and overt frequency adverbs (cf. Rimell 2004).

We have already mentioned the fact that sentences like (33b) and (35b) are not (necessarily) ill-formed. Rimell (2004: section 4) writes: "if [33b] mean[s] anything, [it] seem[s] to have a wide scope-reading of the indefinite. This will be interpreted as a type if possible, and a token if not." The sentences in (33b) and (35b) receive a type-reading which can be paraphrased as follows: There is a type of beer which Marie (usually) drinks. An example of a sentence receiving the token-reading is given in (39).

(39)   *Marie rijdt   een Toyota.*
'Marie drives a   Toyota.'

The interpretation of this sentence can be paraphrased as follows: There is a Toyota which Marie (usually) drives.

Sentences such as (36), (37) and (38) differ from sentences like (35b) and (39) in that they can receive a narrow scope reading of the indefinite object. Above, we have referred to this reading as the ordinary characterizing reading. If habitual interpretations were the result of an empty adverbial element that is

similar to GEN and overt frequency adverbs, we would expect sentences such as (35b) and (39) to be grammatical under a narrow scope reading of the indefinite object as well (i.e., the ordinary habitual reading). Since this prediction is not borne out, we have to conclude that HAB is not similar to GEN and overt frequency adverbs.

Note that we have assumed that frequency adverbs like *meestal* in (38), which express quantifications about situations, occur in the same syntactic position as the implicit habitual quantifier HAB. At the same time, the scopal properties of adverbs like *meestal* in (38) are similar to those of adverbs like *meestal* in (37), which express generalizations about objects, and to GEN in that overt frequency adverbs and GEN can receive wide scope readings.

2.3.2   Habituality and indefinite objects

In this section, we consider how the fact that indefinite direct objects in habitual sentences do not receive narrow scope readings can be accounted for. Our discussion will be based on Rimell (2004). Rimell (2004: section 4) assumes that indefinites are elements with quantificational force of their own: "[I]ndefinites are generalized quantifiers with existential force, and (…) they undergo QR [i.e., Quantifier Raising] to a scope-bearing position in their clause." Rimell argues that in order to take scope, indefinite objects have to move from their base position to a position in which the indefinite singular necessarily takes scope over HAB. Notice that the hypothesis that indefinite singulars are quantifiers with existential force departs from Heim's (1982, 1983) analysis, in which indefinite singulars do not have quantificational force of their own. According to Rimell (2004: footnote 10) her argument can be accommodated in Heim's theory, but she does not make clear how this can be done.

2.3.2.1   *Quantifier Raising*
Rimell assumes that indefinite singulars undergo Quantifier Raising, but she is vague about the exact scope position(s) of indefinite singulars. This section elaborates on this point. Our implementation of Rimell's suggestion is based on Beghelli & Stowell (1997).

The notion of *Quantifier Raising* (QR) needs some explanation. In Generative Grammar, the assumption is made that there is a syntactic operation QR that applies at the covert level of Logical Form (LF). QR raises a quantificational noun phrase from its original position to adjoin to a higher functional projection. Diesing (1992: 4) writes:

> "*quantifier raising* (QR) (…) raises quantificational NPs to adjoin to IP, producing a structure in which an operator (the quantificational noun phrase)

binds a variable (the trace left by the application of QR). The quantifier phrase in its adjoined position thus marks the scope of the quantifier in that its scope is the set of nodes c-commanded by the raised NP at LF."

More recently, Beghelli & Stowell (1997: 72–73) have argued against the idea that all quantificational noun phrases have the same scope possibilities. They write: "The reason why Scope Uniformity cannot be maintained is empirical: different QP-types have correspondingly different scope possibilities." The authors propose a system that draws a distinction among various QP-types (i.e., types of Quantifier Phrases/quantificational noun phrases):

> "The central innovative aspect of the system developed here is that it draws distinctions among various QP-types; whereas *certain* QP-types may take scope in their Case positions (remaining *in situ* at LF), other QP-types must move to distinct LF scope positions reserved for them. Moreover, there are further distinctions among those QP-types that must undergo movement, in the sense that each type has a designated LF scope position defined in the hierarchical phrase structure of the clause."

So, Beghelli & Stowell assume that quantificational noun phrases are assigned scope by undergoing movement to specifier positions of different functional projections. They claim that the syntax of quantifier scope can be captured by recognizing five classes of QP-types. In their typology of QP-types, indefinite singulars are classified as *Group-denoting QPs* (*GQPs*): "To this large class belong indefinite QPs headed by *a*, *some*, *several*, bare-numeral QPs like *one student*, *three students* (…)" (Beghelli & Stowell 1997: 74, my underlining, AO).

Beghelli & Stowell assume that GQPs can raise (at LF) to two different specifier positions in the functional domain. The relevant positions are the specifier of a phrase referred to as 'Ref(erential)P' and the specifier of a phrase labeled 'ShareP'. 'RefP' is 'higher' in the tree than the LF scope position of quantificational noun phrases headed by *every* and *each* ("distributive-quantificational QPs", cf. Beghelli & Stowell 1997: 73). 'ShareP' is 'lower' in the tree than the scope position of phrases headed by *every* and *each*. By making these assumptions, Beghelli and Stowell can explain that in sentences such as (40) the indefinite headed by *two* can be construed either inside or outside the scope of the quantificational noun phrase headed by *every* (cf. Beghelli & Stowell 1997: 80).

(40)   Every/Each student read two books.

Recall that an essential point in Rimell's (2004) proposal is that indefinite singular direct objects take scope over the habitual quantifier. Let us propose that HAB takes scope from the specifier position of F2P and that this is the only possible (scope) position for this element. Beghelli & Stowell (1997: 92) assume that

'ShareP' and 'RefP' are higher than "various lower-level functional projections". Let us assume that F2P is one of these 'lower-level projections'.[12] The resulting order of the three relevant projections is represented in (41).

(41)

```
              RefP
           /        \
        Spec         …
         |             \
    indefinite       ShareP
    singulars       /      \
               Spec         …
                |             \
           indefinite        F2P
           singulars        /    \
                          HAB      …
```
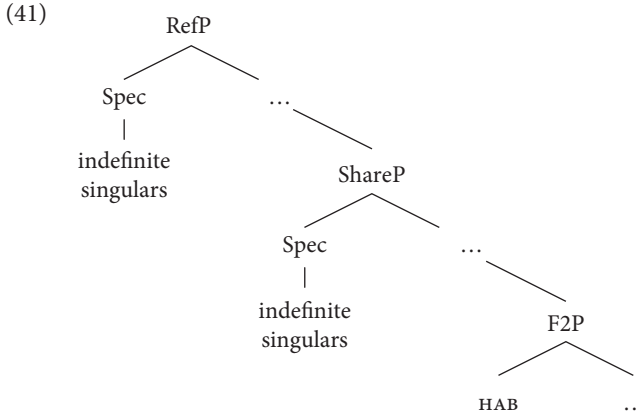
In this structure, the scope positions of indefinite singulars are higher in the tree than HAB.

---

12.   An interesting question, which will not be pursued here, is whether the fact that the scope positions of indefinite singulars are higher in the tree than a number of lower-level projections can be related to observations made by Vanden Wyngaerd (1999). Vanden Wyngaerd argues that indefinite singulars with *a* are positive polarity items, since they cannot be in the (semantic) scope of a clause-mate negation. An example from Vanden Wyngaerd (1999: 209) is presented in (i). This sentence can only receive a reading in which the indefinite singular direct object is outside the scope of negation: There is a woman that Sam didn't greet. This is reminiscent of our observations about habituality.

(i)   Sam didn't greet a woman.

Vanden Wyngaerd observes that sentence (ii) does receive a reading in which the direct object takes narrow scope. Notice that a similar observation can be made for the habitual sentence in (iii). In this corpus example, the direct object with *any* is in the scope of hab. The relevant interpretation is not available in (iv). There are therefore similarities between habitual sentences like (iii) and (iv) and negative sentences like (i) and (ii). A tentative way of accounting for this similarity is by assuming that the scope positions of indefinite singulars are higher in the tree than F2P (as assumed here) as well as NegP (as assumed by Beghelli & Stowell 1997: 80).

(ii)   Sam didn't greet any women.
(iii)   My bug eats any insects and fruit.
(iv)   #My bug eats an insect.

Sentence (iii) originates from http://www.eday.orkney.sch.uk/school/insects/twiterbug.htm (July 2006).

2.3.2.2   *Semantic representations*

Rimell gives concrete semantic content to the quantifier HAB by assuming that it corresponds to a special existential quantifier $\exists_{\text{sufficient}}$, which binds variables over stages. $\exists_{\text{sufficient}}$ means that there exist sufficiently many stages to make a generalization. Rimell (2004: 11–12) leaves the elaboration of the notion *sufficiently many* to pragmatics.[13] In most recent literature, it is assumed that habituals express generalizations about situations (instead of stages). I will follow the latter assumption. My implementation of Rimell's semantic proposal is given in (43). This semantic representation corresponds to the habitual interpretation of sentence (42).

(42)   *Marie   voetbalt.*
          'Marie plays soccer.'

(43) $\exists_{\text{sufficient}}s$ [**voetballen** (**marie**,s)]
          'There are sufficiently many situations in which Marie plays soccer.'

Now let us turn our attention again to (35b), repeated as (44).

(44)   *Marie drinkt een biertje.*

Assuming that an indefinite singular direct object undergoes QR to adjoin to one of the positions indicated in (41), from where it c-commands HAB, the indefinite object takes scope over HAB, as represented in (45). This is the desired result.

(45) $\exists x$ [**bier**(x) & $\exists_{\text{sufficient}}s$ [**drinken**(**marie**,x,s)]]
          'There is a (kind of) beer and there are sufficiently many situations in which Marie is drinking that beer.'

2.3.2.3   *Bare direct objects*

A question that has not been answered yet is why (35a), repeated as (46), is grammatical under the narrow-scope reading of the bare mass noun phrase.

(46)   *Marie drinkt bier.*

---

13.   The elaboration of this notion is a non-trivial task. One aspect is that the possibility that both (42) and (i) are true should be avoided. Both sentences could be true in a world if there are sufficiently many stages in which Marie plays soccer as well as sufficiently many stages in which Marie does not play soccer. The notion *sufficiently many* must be elaborated in such a way that such truth values are avoided.

(i)   *Marie   voetbalt   niet.*
        Marie plays soccer   not
        Marie does not play soccer.

Rimell (2004: 12) assumes that "bare plurals are names of kinds [,] do not have quantificational force"[14] and do not have to undergo QR. We cannot follow this assumption, because kind readings are not available to bare noun phrases in direct object position.[15] Sentences like (47a) and (47b) illustrate that while definite singulars are acceptable in the direct object position of kind predicates, bare noun phrases are not (or less) acceptable.

(47)   a.   *De inheemse   bevolking   roeide de   gorilla / #gorilla's uit.*
            the indigenous population wiped the gorilla /   gorillas out
            'The indigenous population exterminated the gorilla.'

       b.   *Vlaamse monniken hebben ??#(het) witbier   uitgevonden.*
            Flemish monks   have   (the) white beer invented
            'Flemish monks invented white beer.'

Note that there is an alternative reading in which such sentences are acceptable. This interpretation can be paraphrased as follows (cf. (47a)): The indigenous population exterminated some subspecies of the gorilla. We will return to this issue in chapter 6.

    If we assume that bare noun phrases introduce variables (under one of their readings; cf. chapters 3 and 6), as was done in 2.2.3, we expect them to receive narrow scope readings. Under this assumption, bare noun phrases do not undergo QR, but introduce a variable which is existentially bound as a result of the insertion of an existential quantifier taking scope over the whole text (existential closure). Thus, sentence (46) can be represented as (48).

(48) $\exists_{\text{sufficient}}s[\exists x[\mathbf{bier}(x) \ \& \ \mathbf{drinken}(\mathbf{marie},x,s)]]$
       'There are sufficiently many situations in which Marie is drinking beer.'

---

14.   Note that Rimell (2004: 12) refers to *beer* as a bare *plural*. In many publications, the assumption has been made that bare plurals and bare mass noun phrases can be treated on a par (cf. for example Carlson 2006: 48, note 6). For the time being, I assume that bare plurals and mass noun phrases are indeed semantically similar. In chapter 6, I will argue that although the assumption that bare plurals and mass nouns can be treated on a par is not trivial at all, there is some evidence that this assumption is valid.

15.   At first sight, sentences like (i) seem to be counterexamples to this generalization. We return to this issue in chapter 7, where we will argue that noun phrases like *ratten* in (i) do not receive a kind-referential interpretation.

(i)   *Mijn vader roeit   liever ratten uit dan slangen.*
      my   father destroys adv   rats   prt than snakes
      'My father prefers destroying rats to destroying snakes.'

2.3.2.4   *Characterizing interpretations and indefinite direct objects*

The analysis in the previous sections relates the ill-formedness of (narrow scope) indefinite direct objects in habituals to the presence of a habitual quantifier which does not take sentential scope. We predict indefinite singulars to be grammatical in the object position of characterizing sentences, because GEN is assumed to be an operator with (potentially) sentential scope (cf. Krifka et al. 1995).[16] This prediction is borne out, as shown in (49).

(49)   a.   *Bevers   hebben   een staart.*
              beavers have   a   tail
              'Beavers have tails.'
        b.   *Bevers   bewonen   een burcht.*
              Beavers inhabit   a   lodge
              'Beavers live in lodges.'

The predicates used in these sentences can be considered as individual-level predicates: having a tail and living in a lodge are permanent properties of individual beavers. The sentences in (49) therefore express generalizations about objects/individuals and there is no reason to assume a habitual quantifier. These sentences can be represented as in (50).

(50)   a.   GEN[x;] [**bever**(x)] [∃y(**staart**(y) & **hebben**(x,y))]
              'In most cases in which x is a beaver x has a tail.'
        b.   GEN[x;] [**bever**(x)] [∃y(**burcht**(y) & **bewonen**(x,y))]
              'In most cases in which x is a beaver, x lives in a lodge.'

What happens if a characterizing interpretation is combined with habituality? An example is given in (51).

(51)   *Italianen rijden een Fiat.*
        Italians   drive a   Fiat
        'Italians drive Fiats.'

This sentence is a characterizing sentence, which expresses a generalization about Italians. This is represented by assuming a generic quantifier GEN. The property attributed to Italians in (51) is not that they are driving a Fiat at a certain moment,

---

16.   A question which is not considered here is how these semantic assumptions can be embedded in a consistent syntactic framework. Chierchia (1995: 193) assumes that "wherever [quantificational adverbs] are at S-structure, they remain free to select their scope via LF-adjunction." This (or a similar) operation turns out to apply to the implicit adverbial element corresponding to GEN, but not to HAB. Such a description leads to accurate semantic predictions, but the syntactic consequences need further consideration.

but that Italians have the habit of driving a Fiat. This habitual interpretation can be represented by the quantifier $\exists_{\text{sufficient}}$. We expect the indefinite direct object *een Fiat* to undergo QR and to receive wide scope over the habitual quantifier. The resulting representation is given in (52). This seems to be an accurate description of the combined characterizing and habitual interpretation of (51).

(52)   GEN[x;] [**italiaan**(x)] [$\exists$y(**fiat**(y) & $\exists_{\text{sufficient}}$s(**rijden**(x,y,s)))]
'In most cases in which x is an Italian, there is a Fiat and there are sufficiently many situations in which x is driving that car.'

2.3.3   Concluding remarks

The most important observation of the previous sections is that the habitual quantifier cannot be treated on a par with the generic quantifier. A first argument for this conclusion is that one sentence can contain two overt frequency adverbs, where one adverb expresses a generalization about objects and the other corresponds to a generalization about situations. This fact indicates that there are two distinct functional projections which can host these adverbs in their specifiers. If a sentence can contain two overt frequency adverbs, it is reasonable to assume that there are two distinct implicit adverbial elements as well.

A second argument is that while there is a clear relation between habituality and aspect, characterizing interpretations and aspect are much less closely related. This can be accounted for by assuming that in habituals the head of F2P contains an aspectual morpheme. The semantically relevant characteristic of this morpheme is that of carrying an agreement feature requiring the presence of HAB in its specifier. The head of F1P does not contain such an aspectual feature. Thus, we can account for the fact that there is a close relationship between the presence of HAB and the aspectual and temporal properties of the verbal predicate.

Thirdly, the generic quantifier GEN differs from the habitual quantifier HAB in that indefinite singular direct objects necessarily take scope over HAB. This can be accounted for by assuming that HAB differs from GEN in not having (potentially) sentential scope. HAB takes scope from its position in the specifier of F2P. Indefinite direct objects undergo quantifier raising to specifier positions in the functional domain, from where they take wide scope over HAB.

2.4   Indefinite singulars and rules-and-regulations readings

In 2.2.3, we assumed that sentences like (12), repeated as (53), can be represented as in (54). The bare plural *ijsberen* introduces a variable which is bound by a generic quantifier.

(53)   *IJsberen hebben krachtige poten.*

(54)   GEN[x] [**ijsbeer**(x)] ∃y[**krachtige-poten (y)** & **hebben**(x,y)]

In this account, bare plurals do not have quantificational force of their own. Diesing (1992) assumes that indefinite singulars are similar to bare plurals in that they also introduce variables, which suggests that (55) receives the same representation as (53).

(55)   *Een ijsbeer   heeft krachtige poten.*
       'A   polar bear has   strong   paws.'

Recall that we have followed Rimell (2004) in assuming that existentially interpreted indefinite singulars have quantificational force of their own. This is not compatible with the Heim/Diesing account, in which indefinite singulars unambiguously introduce variables, under existential as well as characterizing readings. The claim that existential indefinite singulars are elements with existential force of their own raises the question of how to describe characterizing readings of indefinite singulars. The following sections are devoted to this issue.

In 2.4.1, we discuss the account presented in Cohen (2001). Section 2.4.2 presents some arguments against this account. Section 2.4.3 is devoted to Greenberg's (2002) approach, which is more attractive from the perspective of the data to be discussed in the following sections. Greenberg argues in favour of a uniform account of bare plurals and indefinite singulars, in which the two types of noun phrases have the same basic semantic structure with a generic quantifier, but differ "in the choice of accessible worlds where the generalizations are evaluated" (Greenberg 2002: 120). Section 2.4.4 presents some concluding remarks about the different readings of indefinite singulars discussed in 2.3 and 2.4.

2.4.1   Cohen (2001)

2.4.1.1   *Observations*

Cohen (2001) discusses the 'generic use of indefinite singulars'. He draws a distinction between *inductivist* and *rules-and-regulations* readings of generics. On the first reading, a generic expresses "the way things are and its logical form involves quantification" (Cohen 2001: 183). Sentence (56) normally receives this *inductivist* reading: the sentence is true if and only if madrigals are generally popular. This is not true in the actual world, since madrigals are not generally appreciated by people.

(56)   *Madrigalen zijn populair.*
       'Madrigals   are popular.'

In previous sections *inductivist* readings have been referred to as *characterizing* readings.

Cohen claims that on the second reading a generic does not involve quantification, but refers to some rule or regulation (often a definition). Under this reading, (56) can only be true if being popular is an essential or definitional property of madrigals.[17] So, (56) is false under this reading because being popular is not part of the definition of madrigals, but (57) is true since being polyphonic is part of the definition of madrigals.

(57)   *Madrigalen   zijn   meerstemmig.*
       'Madrigals   are   polyphonic.'

Note, for completeness' sake, that sentence (57) is true under the inductive reading as well.

Cohen's view differs from Carlson (1995: 225), who makes a distinction between two basically different *theories* of generics:

> "The first approach (…) is what I will call the *inductive* approach. The driving intuition behind it lies in the conviction that generics essentially express inductive generalizations, where the base of the generalization is some observed set of instances; after "enough" instances have accumulated, the generic form can be truly asserted. (…) On the other side of the coin is what I will call the *rules-and-regulations* (…) approach. According to this approach, generic sentences depend for their truth or falsity upon whether or not there is a corresponding structure in the world, structures (…) being the the causal forces behind those instances."

New in Cohen's paper is that he does not make a distinction between two *theories* of generics. Instead, he makes a distinction between inductivist and rules-and-regulations *readings*.

In the previous sections, we have discussed characterizing interpretations and we have assumed that characterizing sentences express generalizations. This implies that *characterizing sentences* can be regarded as sentences receiving *inductivist readings*. *Rules-and-regulations readings* have not yet been discussed in the previous sections.

According to Cohen, sentence (58a), taken from Lawler (1973), is unacceptable.

(58)   a.   *Een   madrigaal   is   populair.*
            'A   madrigal   is   popular.'
       b.   *Een   madrigaal   is   meerstemmig.*
            'A   madrigal   is   polyphonic.'

---

17.   Other notions that have been used to refer to 'definitional properties' are 'necessary', 'inherent' or 'analytic'.

Cohen accounts for this by assuming that indefinite singulars are not ambiguous between an inductivist and a rules-and-regulations reading, but only receive the latter interpretation. Cohen (2001: 183) puts it as follows:

> "The distribution of indefinite singular generics is much more restricted than that of bare plural generics. The former, unlike the latter, seem to require that the property predicated of their subject be (…) "definitional". (…) I draw a distinction between inductivist and rules-and-regulations *readings* (…). On one reading, a generic expresses the way things are, and its logical form involves quantification; on the other reading, a generic refers to some rule or regulation (often a definition), and states that it is in effect. <u>While bare plurals</u> <u>are ambiguous between the two readings, indefinite singulars can only refer to a</u> <u>rule or regulation</u>."[18]
>
> (Cohen 2001: 183, my underlining, AO)

Thus, we correctly predict that sentence (58b) is acceptable beyond doubt.

The question is whether Cohen's claim that (58a) is unacceptable can be maintained. A more plausible conclusion is that (58a) is false, but not unacceptable. For the sentence to be unacceptable, being popular must be a definitional property that cannot be felicitously predicated of a piece of music. It is, however, not impossible that being popular is part of the definition of a piece of music. We therefore conclude that (58a) is false, but not unacceptable.

Note that, as a consequence, (56) as well as (58a) is false (in the actual world). The crucial point to be made here is that (56), under its inductive reading, is false for different reasons than (58a). Sentence (58a) (as well as sentence (56) under a rules-and-regulations reading) is false since being popular is not a definitional property of madrigals. Sentence (56), under its inductive reading, is false since madrigals are not generally appreciated.

The semantic contrast between bare plurals and indefinite singulars can be further illustrated by the sentences in (59).

---

18.   If Cohen had assumed that bare plurals unambiguously receive inductivist readings, he would have predicted, for example, that definitions (cf. (58b)) cannot be expressed by bare plurals. This is not true, as illustrated in (i). This sentence is perfectly acceptable and the rules-and-regulations reading, in which the sentence expresses a definition, is its most natural interpretation.

   (i)   *Madrigalen   zijn   meerstemmige   wereldlijke   liederen   waarin   het*
         madrigals   are   polyphonic   secular   songs   in which the
         uitbeelden   van   de   tekst   belangrijk is.
         expression   of   the   text   important is
         'Madrigals are polyphonic, secular songs in which the expression of the text is important.

(59)   a.   *Musicals*   *zijn populair.*
            'Musical comedies (plays) are popular.'
       b.   *Een musical*   *is (een) populair (toneelstuk).*
            'A   musical comedy (play) is (a)   popular (play).'

Both sentences are acceptable, but while (59b) is false since being popular is
not a definitional property of *musicals*, sentence (59a) is true since *musicals* are
generally popular (at least in some countries).

2.4.1.2   *Representations*

Cohen's conclusion is that sentences such as (59b) "express a rule or a regulation,
rather than a quantificational statement" (cf. Cohen 2001: section 8). He assumes
that the logical representation of sentence (59b) differs from the representation of
sentence (59a) under the characterizing (or 'inductive') reading. Cohen uses the
example sentence in (60) to illustrate how he represents indefinite singulars in
rules-and-regulations sentences.

(60)   A gentleman opens doors for ladies.
       Cohen (2001: section 7) writes:

       "What does it mean to say, for example, that the rule expressed by [60] is fol-
       lowed? Perhaps the most straightforward way to represent this fact is to state
       that some conditional, represented schematically as follows, holds:

       (…) **gentleman**$(x) \Rightarrow$ **open-doors-for-ladies**(x)

       What exactly the conditional $\psi(x) \Rightarrow \phi(x)$ means I will leave unspecified. It
       may simply mean extensional universal quantification, i.e., $\forall x(\psi(x) \rightarrow \phi(x))$, or
       perhaps some more intensional version."

Cohen emphasizes that **gentleman**$(x) \Rightarrow$ **open-doors-for-ladies**(x) is a proposition,
which can be true or false (although he does not make clear under what conditions
it is true or false). A rule is, however, not the kind of thing that may be true or false.
Cohen assumes, with Carlson (1995), that rules are "basic, irreducible entities in the
world. Rules are not formulas; however, they can be described by formulas." So, in
order to represent sentences like (60), an operator is needed which maps the formula
gentleman$(x) \Rightarrow$ **open-doors-for-ladies**(x) to the rule it describes. If we assume that
'!' is such an operator, the rule described by this formula can be represented as (61).

(61)   !(**gentleman**$(x) \Rightarrow$ **open-doors-for-ladies**(x))
       'the rule described by the formula **gentleman**$(x) \Rightarrow$ **open-doors-for-ladies**(x)'

Sentence (60) predicates of the rule represented in (61) that it is in effect.
Cohen accounts for this by assuming a predicate, **in-effect**. Sentence (60) can be
represented, then, as in (62).

(62) **in-effect**(!(**gentleman**(x) $\Rightarrow$ **open-doors-for-ladies**(x)))
　　　'the rule described by **gentleman**(x) $\Rightarrow$ **open-doors-for-ladies**(x) is in effect.'

This logical form is satisfied just in case the rule that gentlemen open doors for ladies is in effect. Cohen assumes that in this case being in effect means that the rule is socially accepted. There can be other cases where being in effect has other implications. For example, the rule corresponding to (59b) is in effect if it is accepted by the language community.

2.4.2　Drawbacks of Cohen's proposal

As it stands, Cohen's account leaves some questions unanswered. A first point is that Cohen does not make clear what conditionals like **gentleman**(x) $\Rightarrow$ **open-doors-for-ladies**(x) exactly mean. Cohen assumes that this conditional is a proposition which can be true or false, but its truth conditions remain vague. A second point is that Cohen (2001: 183) writes that "indefinite singulars can only refer to a rule or a regulation." It would be more accurate to say that sentences in which indefinite singulars are used (and not indefinite singulars themselves) receive this interpretation. This gives rise to the following question: How can the semantics of sentences like (60) be derived from the meanings of the indefinite singular subject and the other constituents? Cohen does not provide an answer to this question.

Possibly, these questions could be answered if Cohen's account is further developed. There is, however, a third point which makes Cohen's account less attractive. This point is illustrated in (63) and (64).

(63) a. *…dat struikrovers zich in deze wouden ophouden.*
　　　　…that brigands　　REFL in these forests　hang around
　　　　'… that brigands live in these forests.'
　　b. *…dat er　　zich in deze wouden struikrovers ophouden.*
　　　　…that there REFL in these forests　brigands　　hang around
　　　　'… that there are brigands hanging around in these forests.'

(64) a. *…dat een struikrover zich in deze wouden ophoudt.*
　　　　…that a　brigand　　REFL in these forests　hangs around
　　　　'… that a brigand hangs around in these forests.'
　　b. *…dat er　　zich in deze wouden een struikrover ophoudt.*
　　　　…that there REFL in these forests　　a　brigand　　hangs around
　　　　'… that there is a brigand hanging around in these forests.'

These example sentences are adapted from de Mey (1982). De Mey observes that the interpretation of bare plurals depends on their syntactic position. The sentences in (63) illustrate the fact that there are two structural subject positions (cf. also Adger 2003: 204–243). Following Adger (2003), we assume that in (63a) *struikrovers* is in the specifier position of TP and that in (63b) it is in the specifier position of *v*P.

This syntactic difference corresponds to a semantic contrast (cf. Diesing 1992 for similar claims): (63a) expresses a generalization about *struikrovers*, while in (63b) the bare plural gets an existential reading. So, the situation illustrated by these sentences can be described as follows: if the bare plural is in [Spec, TP], it gets a characterizing reading; if it is in [Spec, vP], it receives an existential reading.

Importantly, the same observation can be made for the indefinite singulars in (64). In (64a), the indefinite singular is in [Spec,TP] and receives a characterizing reading (as its most natural reading) and in (64b) it is in [Spec,vP] and receives an existential reading.

In (65), a mapping of syntactic positions to semantic interpretations is presented.

(65)

```
                        TP
              ┌─────────┴─────────┐
       struikrovers              T'
       een struikrover      ┌────┴────┐
              │             T        ...
              │                  ┌────┴────┐
              │                          vP
              │                   ┌───────┴───────┐
              │            struikrovers           v'
              │            een struikrover    ┌───┴───┐
              │                  │            v      ...
              ▼                  ▼
        characterizing      existential
        interpretation      interpretation
```
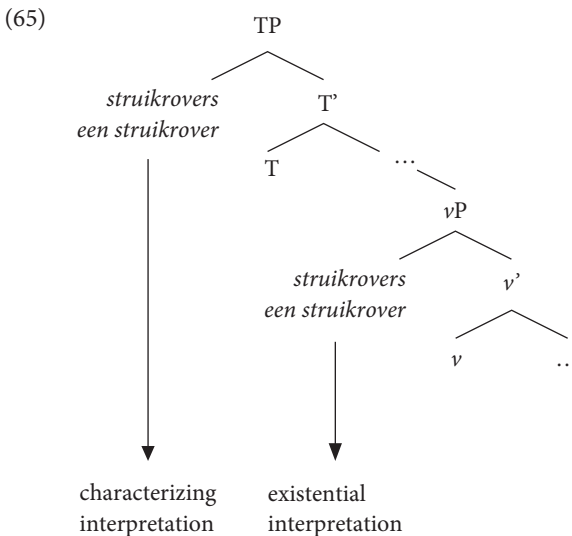
In Cohen's account such a mapping is much more complicated, because he assumes totally different representations (or interpretations) for indefinite singulars and for bare plurals. Under his approach, we would have to assume that the specifier position of TP is mapped onto a rules-and-regulations reading or onto a characterizing/inductive reading. Such an assumption does not lead to an elegant and parsimonious description of the semantic similarities between (63a) and (64a). A more straightforward account can be given if we assume that indefinite singulars can receive characterizing readings, just like bare plurals.

2.4.3   An alternative account: Greenberg (2002)

Greenberg assumes that sentences such as (66a) and (66b) basically have the same semantic structure.

(66)   a.   Dogs have four legs.
       b.   A dog has four legs.

Greenberg (2002: 111) represents such sentences by assuming a generic quantifier GEN, binding the variable introduced by the subject (cf. 2.2.3 for similar representations).[19]

(67)   GEN[x;] [**dog**(x)] [**have-4–legs**(x)]

This treatment suggests that both sentences in (66) are characterizing sentences.

2.4.3.1   *Some general comments*

An assumption about the semantics of GEN that has not been discussed in previous sections is that it is 'modalized'. Greenberg (2002: 105) writes: "As for the semantics of Gen, it is generally assumed (in e.g., Dahl 1975, Wikinson 1991, Chierchia 1995, Krifka 1995) that it is universal and modalized, i.e., that it <u>universally</u> quantifies not only over individuals and situations, but also over possible worlds, restricted by some sort of (…) accessibility relation" (my underlining, AO). Let me first make the comment that Krifka (1995) and Chierchia (1995) do not (or at least not necessarily) assume that GEN *universally* quantifies over individuals, situations and possible worlds. Krifka (1995: 398) writes: "I assume explicit quantification over possible worlds". This does not (necessarily) mean that he assumes *universal* quantification over possible worlds, individuals or situations. Chierchia (1995: 195) writes:

> "[W]e (…) obtain typical [characterizing] sentences whose interpretation is <u>fairly close to</u> that of the corresponding sentence with an *always*-like [<u>quantificational adverb</u>]. (…) What is specific to **Gen** relative to other Q-adverbs is the nature of its modal dimension. To spell this out is a very hard task. (…) [*Fred smokes*] is true iff in <u>all worlds</u> maximally similar to ours where the felicity conditions for Fred's smoking are met, he does smoke."   (my emphasis, AO)

So, Chierchia assumes universal quantification about worlds, but does not assume universal quantification over individuals. He claims that the interpretation of characterizing sentences is *fairly close* (but not identical) *to* the universally quantifying adverb *always*.

It is not correct that the semantics of GEN is generally assumed to be universal and modalized. Ariel Cohen's dissertation is an example of a recent study that does not assume the semantics of GEN to be universal. Cohen assumes that characterizing sentences express probability judgements. He claims that "majority is sufficient" (Cohen 1999: 87) and that a characterizing sentence is true if the probability of

---

19.   Greenberg assumes that GEN can bind not only 'individual variables', but also 'situation variables'. In section 2.3, we argued against such representations of habituality. We will describe Greenberg's account of these sentences without being explicit about the representation of habituality. Nothing crucial hinges on Greenberg's assumptions about habituality.

the predicated property is greater than 0.5 (Cohen 1999: 94). Furthermore, many recent accounts of characterizing sentences do not adopt the claim that GEN is assumed to be modalized, i.e., that GEN (universally) quantifies over possible worlds. For example, Krifka et al. (1995: 45) write:

> "Several methods have been proposed to capture the semantics of the generic operator in characterizing sentences. (…) [W]e will sketch and discuss six of these –without coming to any hard and fast, final conclusion. First, the GEN-operator might be spelled out as a 'relevant quantification'. Second, the notion of prototypical entities might be employed. Third, GEN can be seen as a statement of a stereotype. Fourth, GEN might be analyzed as a modal operator, to be interpreted in a possible-worlds semantics. Fifth, GEN might be analyzed as combining with a sentence to express a constraint in the theory of Situation Semantics. And sixth, GEN might be analyzed in such a way as to indicate a nonmonotonic inference rule."   (my underlining, AO)

So, there are several methods to capture the semantics of the generic operator and many of these methods do not even make use of possible worlds.

2.4.3.2   An account of the data in terms of accessibility relations

Let us assume that Greenberg's claim that characterizing sentences universally quantify not only over individuals, but also over possible worlds, is a legitimate hypothesis about the semantics of GEN. Under this assumption, (67) can be written explicitly as in (68).

(68) $\forall$w'[w' **is appropriately accessible from** w] $\rightarrow$ [$\forall$x [**dog**(x) $\rightarrow$ [**have-4–legs**(x)]]
        'In all worlds w' appropriately accessible from the world of evaluation w, every dog has four legs.'

In (68), the universal quantification over individuals (in this case dogs) is required to hold in a set of worlds accessible from the world of evaluation. In the cases under consideration here, the world of evaluation can be assumed to be 'our world' (or 'the actual world').

The idea that the minimally contrastive sentences in (66) have the same semantic representation, i.e., (68), has some attractive consequences. Greenberg writes that

> "the quantification over individuals […] captures the fact that both types of sentences are felt to express generalizations over such entities (…). The fact that the universal statement in [68] is under the scope of a modal operator, i.e., it is required to hold in a set of accessible worlds, rather than merely in the actual world, captures the intuition that the generalizations expressed by (…) sentences like [66a] and [66b] are taken to be "law-like", or "nonaccidental"."

She proposes that the difference between the sentences in (66) lies in the decision of which worlds w' will be considered appropriately accessible from w. The idea is that there are two types of generalizations which are differently syntactically encoded in Dutch, English and in a number of other languages as well. Greenberg refers to these two types of generalizations as 'in virtue of' and 'descriptive' generalizations. Characterizing sentences like (69), in which an indefinite singular is used, express 'in virtue of' generalizations, asserting that the generalization is true by virtue of some property, associated with the property of being a boy (i.e., the property denoted by the noun phrase over which GEN quantifies).

(69)   A boy doesn't cry.

In (69), the property that is associated with the property of being a boy can, for example, be the property of being tough. Assuming this, (69) can be paraphrased as in (70).

(70)   The generalization "Every boy doesn't cry" is true in virtue of some property, associated with the property of being a boy (e.g., the property of being tough).

There are sentences where the choice of the 'in virtue of' property is not clear if the sentence is uttered out of the blue (cf. Greenberg 2002: 110). Greenberg illustrates this with the example sentence in (71):

(71)   A woman in this place doesn't walk alone.

Hearing (71), one can accommodate any of the properties in (72).

(72)   –   In virtue of following the local religious or social norm…
        –   In virtue of living in such a dangerous and violent place…
        –   In virtue of being so beautiful and charming… (so every woman in this place is always accompanied by some man)

Greenberg claims that the 'in virtue of' property corresponding to sentence (66b), repeated as (73), is "(in virtue of) having a four legged genetic makeup".

(73)   A dog has four legs.

How can the semantics of sentences such as (73) be logically represented? The representation in (68) is based on the assumption that the sentences in (66) express quantifications over accessible worlds. Greenberg assumes that the accessibility relation of sentences with indefinite singulars, such as (73), is restricted by an 'in virtue of' property. More specifically, the worlds the sentence quantifies over are those where every dog has the 'in virtue of' property. Suppose you hear (73) and the 'in virtue of' property is "having a four legged genetic makeup".

In this case the accessible worlds are those where every dog has a four legged genetic makeup. So, sentence (73) can be represented as in (74).

(74) $\forall w'$ [$\forall x$[**dog**(x,w')] → [**has-a-four-legged-genetic-make-up**(x,w')]] →
        [$\forall x$[**dog**(x,w')] → [**has-four-legs** (x,w')]]
        'In all worlds where every dog has a four legged genetic makeup, every dog has four legs.'[20]

We have not yet described how the choice of the 'in virtue of' property can be restricted. Note that a clearly false sentence like (75), for example, may be interpreted as in (76), and thus wrongly predicted to be true.

(75)   A dog has three legs.

(76)   'In all worlds where every dog has a tree legged genetic makeup, every dog has three legs.'

This shows that we cannot choose any property as 'in virtue of' property. The property we choose has to meet some criteria imposed by our world knowledge. Greenberg assumes that we can only choose properties which, given our knowledge of the actual world, are "associated" with the property of being a dog (in the case of (73)).

What determines whether a certain property is "associated" with another property is not the state of affairs in the actual world, but rather our beliefs, norms and stereotypes about the actual world. This point is summarized in (77).

(77)   a.   'In virtue of' properties must be "associated" with the property denoted by the noun phrase quantified over.
        b.   A property P can only be "associated" with another property Q if it follows from our beliefs, norms and stereotypes about the actual world that every individual Q has the "associated" property P.

We associate being tough with being a boy (cf. (69)), since it follows from the norms in our actual world that every boy is tough. Assuming that in (69) "being tough" is the 'in virtue of' property, we predict that (69) is true if and only if the universal statement "every boy doesn't cry" holds not (necessarily) in the actual world, but in all worlds where every boy is tough.

These assumptions correctly predict that (75) is false. There are many properties we associate in our world with being a dog (for example having a tail and

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20.   Here, we follow Greenberg in assuming that (73) is true if and only if in all accessible worlds *every* dog has four legs. Probably, the sentence would also be true if in a number of accessible worlds there is a (small) number of dogs that do not have four legs. In 2.2, we have assumed that GEN is closely related to adverbs like *usually*. This proposal seems to be more in agreement with the actual truth conditions of characterizing sentences.

being loyal), but having a three legged genetic makeup is not one of these properties (Greenberg 2002).

In 2.4.1.1, we discussed Cohen's (2001) claim that bare plurals are ambiguous between 'rules-and-regulations' and 'inductivist' readings. Greenberg (2002) makes a similar assumption: she assumes that bare plurals are ambiguous between a reading in which they express 'in virtue of' generalizations and a second interpretation, in which they express 'descriptive' generalizations. She assumes that under the 'descriptive' reading of (73), the accessible worlds are not restricted by an 'in virtue of' property.

Recall that Greenberg assumes that a representation like the one in (67), repeated as (78), can be rewritten as (68), repeated as (79).

(78)   GEN[x;] [**dog**(x)] [**have-4–legs**(x)]

(79) $\forall$w'[w' **is appropriately accessible from w**] $\rightarrow$ [$\forall$x [**dog**(x)] $\rightarrow$ [**have-4–legs**(x)]]
         'In all worlds w' appropriately accessible from the world of evaluation w, every dog has four legs.'

Now the question is: which worlds w' will be considered appropriately accessible from w with regard to the 'descriptive' generalization expressed by (66a) (in one of its readings)?

Greenberg (2002: 114) suggests that the 'descriptive' generalization expressed by (66a) is required to hold in worlds w' which are "maximally similar" to our world. So, in this case (79) can be rewritten as (80). Greenberg assumes that "maximally similar worlds" are worlds which are completely identical to our world, except from one thing: there may be other populations of dogs (e.g., there may be more, or less, or they may be totally different).[21]

(80) $\forall$w'[w' **is maximally similar to** w] $\rightarrow$ [$\forall$x [**dog**(x)] $\rightarrow$ [**have-4–legs**(x)]]
         'In all worlds w' which are completely identical to our world, except that there may be different populations of dogs, every dog has four legs.'

2.4.3.3   *Applying Greenberg's account to Lawler's (1973) observations*

Let us now return to Lawler's observations (referred to in 2.4.1.1). Greenberg's proposal can account for the contrast between the sentences in (81) from Lawler 1973 (cf. (58)).

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21.   Greenberg's proposal is based on Lewis's account of counterfactual conditionals (cf. Greenberg 2002: 114). Lewis basically assumes that a conditional is true if and only if the consequent of the conditional holds at every world which is "closest to" (cf. "maximal similarity") our world and in which the antecedent is true.

(81) a. *Een madrigaal is populair.*
      b. *Een madrigaal is meerstemmig.*

Recall that we have observed that (81a) is false, since being popular is not a defini-
tional property of madrigals and that sentence (81b) is true, since being polyphonic
is a definitional property of madrigals. Greenberg's account predicts that (81b)
is true if and only if the universal statement "every madrigal is polyphonic" is
true not (necessarily) in the actual world, but in all worlds which are accessible
from our world. Recall that Greenberg proposes that in characterizing sentences
with indefinite singulars worlds w' are "accessible" from our world w if and only
if the 'in virtue of' property is true of every madrigal in w'. Let us assume that
the relevant property is "(in virtue of) being defined as *polyphonic*". Note that it
is in agreement with our beliefs, norms and stereotypes about the actual world
that the property of being defined as *polyphonic* is associated with the property of
being a madrigal. As a result, (81b) can be interpreted as in (82) and is correctly
predicted to be true.

(82) 'In all worlds where madrigals are defined as polyphonic, every madrigal is
      polyphonic.'

Let us now examine (81a). This sentence is predicted to be true if and only
if "every madrigal is popular" is true in all worlds which are accessible from our
world, i.e., in all worlds in which every madrigal has the 'in virtue of' property.
There are a number of 'in virtue of' properties that we can associate with madri-
gals. One example is presented in (83), where we assume that "being defined as
polyphonic" is the relevant property.

(83) 'In all worlds where madrigals are defined as polyphonic, every madrigal is
      popular.'

Another possibility is that "being secular" is the 'in virtue of' property. Under
these interpretations, the sentence is predicted to be false. The problem with sen-
tence (81a) is that there are (probably) no 'in virtue of' properties on the basis of
which we predict "every madrigal is popular" to be true. Thus, we correctly predict
that the sentence is false.

Let us now consider the sentences in (84) (cf. (56) and (57)).

(84) a. *Madrigalen zijn populair.*
      b. *Madrigalen zijn meerstemmig.*

Recall that these sentences are ambiguous. Under Cohen's 'rules-and-regulations'
reading, (84a) is false because being popular is not a definitional property of mad-
rigals (cf. the discussion about (81a)), but (84b) is true because being polyphonic is

a definitional property of madrigals (cf. the discussion about (81b)). Under Cohen's 'inductive' reading, (84a) is false, since madrigals are not unanimously appreciated and (84b) is true, since madrigals are generally polyphonic.

Greenberg accounts for the 'inductive' reading by assuming that sentences like those in (84) are true if and only if the relevant generalizations hold in all worlds maximally similar to our world. Maximally similar worlds are worlds which are completely identical to our world, except for one thing: there may be other populations of madrigals (e.g., more, fewer, or totally different ones). So, (84a) is true if and only if in all worlds which are maximally similar to our world, every madrigal is popular. The sentence is correctly predicted to be false under this reading. Sentence (84b) is true if and only if in all worlds which are maximally similar to our world every madrigal is polyphonic. The sentence is thus correctly predicted to be true.

2.4.4   The ambiguity of indefinite singulars

In this chapter, we have discussed two interpretations of indefinite singulars. Section 2.3.2 was devoted to sentences such as (44), repeated as (85).

(85)   *Marie drinkt een biertje.*

The indefinite singular object *een biertje* ('a beer') has quantificational force of its own and undergoes Q(uantifier) R(aising). In sections 2.4.1–2.4.3, we discussed characterizing sentences such as (81b), repeated as (86), in which the indefinite singular does not have quantificational force, but introduces a variable which is bound by a generic quantifier.

(86)   *Een madrigaal is meerstemmig.*

So, indefinite singulars are ambiguous between a reading in which they have quantificational force and undergo QR (cf. (85)) and a reading in which they do not have quantificational force and do not undergo QR (cf. (86)). A similar conclusion was drawn by Diesing (1992).

This must not be understood to mean that indefinite singulars are ambiguous in every sentence in which they appear. A crucial aspect of our description of sentences like (85) is that existentially quantified indefinite singulars like *een biertje* ('a beer') unambiguously have existential force of their own (cf. 2.3.2), i.e., *een biertje* in (85) is not ambiguous. This gives rise to the following hypothesis: it is a consequence of the fact that indefinite singulars have an interpretation in which they have existential force of their own that they cannot receive existential force from external quantifiers (i.e., from *existential closure*). The interpretations of indefinite singulars can now be summarized by the generalizations in (87).

(87) a. Indefinite singulars are ambiguous between the following interpretations:
          – they are quantificational noun phrases with existential force (as in (85));
          – they introduce variables, which can be bound by a generic quantifier
            (cf. (86)).
      b. The possibility of receiving existential force from external quantifiers is
          blocked by the fact that indefinite singulars can have existential force of
          their own.

2.5   Summary

In this chapter, we have discussed three sentence types that have been classified
in the literature as characterizing sentences: sentences expressing generaliza-
tions about objects (cf. (88)), habitual sentences (cf. (89)) and Cohen's 'rules-
and-regulations' sentences (cf. (90)).

(88) *Siberische tijgers zijn echte vleeseters*
      'Siberian tigers are real   meat eaters.'

(89) *Marie drinkt volle   melk.*
      'Marie drinks whole milk.'

(90) *Een jongen huilt niet.*
      a   boy   cries not
      'A boy doesn't cry.'

Characterizing sentences contain a silent quantifier GEN, which binds variables
ranging over objects. We have argued that this quantifier is closely related to
overt frequency adverbs. A semantic representation of sentence (88) can be
found in (91).

(91) GEN[x] [**Siberische-tijger**(x)] [**echte-vleeseter**(x)]
      'In most cases in which x is a Siberian tiger, x is a real meat eater.'

We argued against a uniform treatment of habituals and characterizing sen-
tences. Habituals differ from characterizing sentences in that indefinite singulars
in the direct object position of habituals necessarily take a wide scope reading.
This can be explained by assuming that the habitual quantifier deviates from GEN
in not having (potentially) sentential scope: HAB takes scope from its position in
the specifier of a projection referred to as F2P. Existential indefinite singulars are
treated as elements with quantificational force of their own: they undergo Quanti-
fier Raising to adjoin to specifier positions higher in the tree than F2P. From this
position, they take scope over HAB. This was further implemented by assuming
that HAB corresponds to a special quantifier $\exists_{\text{sufficient}}$, which binds variables over

situations (and can appear in the nuclear scope of GEN). A representation of (89) is presented in (92).

(92) $\exists_{\text{sufficient}}s[\exists x[\textbf{volle-melk}(x) \ \& \ \textbf{drinken} \ (\textbf{marie},x,s)]]$
'There are sufficiently many situations in which Marie is drinking whole milk.'

Cohen (2001) observes that sentences such as (90) attribute definitional properties to indefinite singulars. We have argued against his account of the subtle semantic contrasts between sentences like (88) and (90). A more attractive perspective is presented by Greenberg (2002), who assumes that sentences like (88) and (90) have the same basic semantic structure, but differ in the choice of accessible worlds where the generalizations are evaluated. In the case of (90), the accessible worlds are restricted to worlds in which every boy has the 'in virtue of' property, i.e., "being tough". A representation of (90) is presented in (93).

(93) $\forall w' \ [\forall x[\textbf{jongen}(x,w')] \rightarrow [\textbf{stoer}(x,w')]] \rightarrow [\forall x[\textbf{jongen}(x,w')] \rightarrow [\neg\textbf{huilen} \ (x,w')]]$
'In all worlds where every boy is tough, every boy doesn't cry.'

Kind reference

3.1 Introduction

The previous chapter was devoted to the semantics and some aspects of the syntax of characterizing sentences. Another phenomenon commonly associated with genericity is reference to kinds (cf. Krifka et al. 1995: 2). This phenomenon is completely independent of the expression of characterizing interpretations. Noun phrases can have a kind denotation even in sentences that do not express generalizations, like (1) and (2) (cf. 3.2.1 for further discussion).

(1) a. <u>De dodo</u> is uitgestorven.
         'The dodo is extinct.'
     b. <u>De reuzenpanda</u> is een bedreigde diersoort.
         'The giant panda is an endangered species.'

(2) a. *Frans fotografeerde <u>de tijger</u> voor het eerst in 1980.*
         'Frans photographed the tiger for the first time in 1980.'
     b. *Ik betrad het Afrika-gedeelte van de zoo en stond oog in oog*
         'I entered the Africa area of the zoo and stood face to face
         met <u>de gnoe.</u>
         with the gnu.'

This chapter is organized as follows. Section 3.2 discusses the semantics of sentences like (1), in which *kind predicates* are used. *Kind predicates* are predicates with argument places that can be filled only with kind-referring noun phrases. Krifka et al. (1995: 78–79) refer to the interpretation of such sentences as *kind predicate interpretation*. In 3.3 we discuss the semantics of sentences like (2), in which a kind-referring noun phrase is used in an *episodic* sentence. An episodic sentence is a sentence that reports a particular event or situation. Krifka et al. (1995: 83) refer to the interpretation of such sentences as the *representative object reading*. Section 3.4 discusses the *characterizing property reading*. Krifka et al. (1995: 81) use this label to refer to the interpretation of characterizing sentences in which a kind-referring noun phrase is used. An example of this reading is presented in (3).

(3) *De vliegenzwam heeft een rode hoed met witte stippen.*
     'The fly agaric has a red cap with white spots.'

Section 3.5 is devoted to *taxonomic* kind-referring noun phrases. A kind-referring noun phrase is taxonomic if the denotation of the common noun ranges over kinds rather than objects (cf. Longobardi 2001: 340, note 6). An example of such a noun phrase is *één walvis* ('one whale') in (4). In this sentence, the noun *walvis* does not denote a set of objects, but corresponds to the set of whale species. Section 3.6 summarizes our main conclusions.

(4)   *Eén   walvis, namelijk de blauwe vinvis, is bijna   uitgestorven.*
      'One whale, namely   the blue   whale, is nearly extinct.'

3.2   Kind predicate interpretation

3.2.1   Observations

Kind predicates are predicates that can be applied only to kind-referring noun phrases. Some examples of 'kind predicate sentences' were given in (1). Although there is no doubt that definite singulars are the unmarked option in kind predicate sentences, bare plurals can be used in argument positions of kind predicates as well. Example sentences can be found in (5).[1]

(5)   a. *%Dodos   zijn uitgestorven.*
         'Dodos are extinct.'
      b. *%Vaste   telefoons   worden met uitsterven bedreigd.*
         stationary telephones are   with extincton threatened.
         'Stationary telephones are threatened with extinction.'

These sentences show that a bare plural can not only get a reading in which it introduces a variable that can be bound by GEN (cf. chapter 2), but a kind-referring reading as well (but cf. note 1).

It is well-known that indefinite singulars cannot normally receive kind readings (see e.g., Krifka et al. 1995 and Broekhuis, Keizer & den Dikken 2003: 609). This is illustrated in (6).[2]

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1.   There are speakers who judge such sentences unacceptable (cf. the judgements in Haeseryn et al. 1997: 812 and Broekhuis, Keizer & den Dikken 2003: 609). In 2.3.2.3, we observed that bare plurals are unacceptable in the direct object position of kind predicates like *uitvinden* ('to invent'). These observations illustrate that bare plurals are not the most unmarked option in kind predicate sentences. We return to this issue in chapter 6.

2.   Recall that in chapter 2 we argued that characterizing sentences with indefinite singulars express 'in virtue of' generalizations. Such sentences are commonly used to express definitions. Cohen (2001: section 8) observes that "[i]f the sentence is clearly in the form of a definition, even kind predicates may modify [an] (…) [indefinite singular]." An example of this is presented

(6)   a. *#Een dodo is uitgestorven.*
          a   dodo is extinct
       b. *#Een vaste   telefoon   wordt met uitsterven bedreigd.*
          a   stationary telephone is   with extinction threatened

The incompatibility of indefinite singulars and kind predicates can be used as a test to determine whether a predicate is a kind predicate.

Kind predicate sentences differ from characterizing sentences in that they do not express generalizations. Let us consider sentence (1a), repeated as (7), to illustrate this claim.

(7)   *De dodo is uitgestorven.*

The kind predicate *uitgestorven zijn* corresponds to a property of kinds. Individual instances of dodos cannot be extinct. The sentence does not receive the following interpretation: In most cases in which x is a dodo, x is extinct (cf. chapter 2). We can assume that kind predicate sentences (semantically) correspond to simple predicate-argument structures. In (7), the predicate *uitgestorven zijn* is directly predicated of the kind which corresponds to *de dodo*.

Although (7) does not express a generalization about objects, it is possible that the information expressed by such sentences enables language users to draw conclusions about specimens by deduction. For example, if (7) is true, we can deduce that an individual instance of the kind is dead or lived before the date of extinction of the dodo. The question is whether such information is relevant from a purely linguistic perspective or from a philosophical, psychological or cognitive scientific perspective. I assume that the second option is correct and that from a linguistic point of view sentences like (7) do not get a characterizing reading.

3.2.2   Semantics and representations

To develop this linguistic description of kind reference, we assume a domain of interpretation which contains two sorts of entities: *kinds* (or *kind-level entities*)

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in (i). This sentence, taken from Cohen (2001: example (67a)), is the definition of *dinosaur* in the Cobuild dictionary. A Dutch translation of (i) is given in (ii). This sentence is relatively acceptable as well. Observe that in Cohen's sentence (i) the kind predicate is not predicated directly of the indefinite singular, but is connected to it by way of a relative pronoun. Such special sentences cannot be seen as counterexamples to the claim that kind predicates cannot normally be used with indefinite singulars.

i.   A dinosaur was a large reptile which lived in prehistoric times and which is now extinct.
ii.   Een dinosauriër was een groot reptiel dat in de prehistorie leefde en dat nu uitgestorven is.

and *objects* (or *object-level entities*). We can assign properties to kinds (cf. (7)) in exactly the same direct way that properties can be assigned to objects (cf. (8)).

(8)   *Einstein   was schrander.*
       'Einstein was intelligent.'

Sentence (7) and (8) have a similar semantics: (i) kind-denoting terms such as *de dodo* ('the dodo') are similar to object-denoting proper names like *Einstein* in that both directly refer to entities; (ii) the predicates are directly predicated of these entity-denoting noun phrases.

The similarity between (7) and (8) can be further illustrated by the domain of interpretation in figure 3.1. We introduce three sets: S, D and U. These correspond, respectively, to the following predicates: *schrander*, *dodo* and *uitgestorven*. We assume an interpretation function I, which maps expressions of natural language onto their denotation in the domain of interpretation. These mappings are represented in (9) and (10).

(9)   a.   I(*schrander*) = S = {a,b,c,d,e,f,g,h,i}
       b.   I(*dodo*) = D = {g,h,i,j,k,l,m,n,o}
       c.   I(*uitgestorven*) = U = {p,q,r,s,t,u,v,w,x}

(10)   a.   I(*Einstein*) = e
       b.   I(*Raphus cucullatus*) = w

For the sake of presentation only two proper names, namely *Einstein* and *Raphus cucullatus* (the scientific name for the dodo), are introduced and related to the corresponding entities (cf. (10)). The up-arrow '↑' stands for an operation which maps sets of objects onto the corresponding kinds. In figure 3.1, '↑' maps the set D (i.e., the set of dodos) onto the entity w (the kind *Raphus cucullatus*). Now we can illustrate that sentence (7) and sentence (8) have similar truth conditions. Sentence (8) is true in the domain of figure 3.1, because the entity e (denoted by the proper name *Einstein*) is an element of the set S (the denotation of *schrander*). The truth of (7) can be proved in the same way. This sentence is true because the entity w (corresponding to the proper name *Raphus cucullatus*) is an element of the set U (the denotation of *uitgestorven*).

Proper names can be used to refer to kinds as well as to objects. So, the idea that objects and kinds jointly constitute the domain of entities is attractive from the perspective of the syntax-semantics interface. It allows us to make the generalization that proper noun phrases are used to refer directly to entities.

In sentences like (7), the kind corresponding to the proper name *Raphus cucullatus* is not denoted by a proper name, but by a common noun phrase. If we assume that common nouns (basically) denote properties (which is the
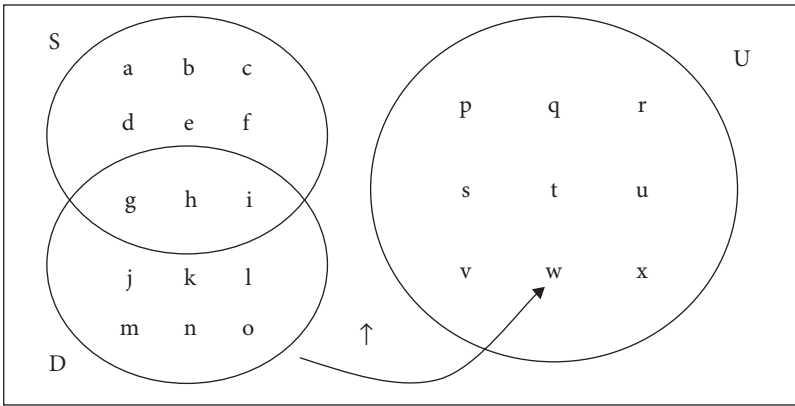
Figure 3.1 A domain of interpretation.

standard view, cf. among others Link 1995; Dayal 2003 & Glasbey 2006), we need a technique to map (or *type-shift*) a property to a kind. I will make use of Cohen's (1999) proposal. Cohen (1999: 42) follows Link (1995) in using $\uparrow$p to represent the kind denoted by the common noun whose meaning is p. Thus, for example, the kind denoted by *de dodo* is $\uparrow$**dodo**. Now, (7) can be represented as (11).

(11)   **uitgestorven($\uparrow$dodo)**
       'the kind corresponding to *dodo* is extinct.'

The 'up-arrow' operation maps sets of entities onto kinds (cf. also figure 3.1). So, the representation in (11) can be seen as a notational variant of (12). A difference between (11) and (12) is that (12) does not relate the kind denotation of the common noun phrase *de dodo* ('the dodo') to the property denotation of the common noun *dodo*.[3]

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3.   Not every common noun corresponds to a kind. It has, for example, been observed that definite singulars cannot normally refer to a kind that is 'too general' (Carlson 1977: 274–275). Sentence (i) shows that the same holds for Dutch (Oosterhof 2003). The restrictions on what counts as a kind will be discussed in chapter 6.

(i)   #?*Het zoogdier heeft tamelijk goede ogen.*
       'The mammal has   rather   good eyes.'

(12)   **uitgestorven**(w)
       'Raphus cucullatus is extinct.'

3.3   Representative object interpretation

3.3.1   Observations

Sentences like (2a), repeated as (13), raise an interpretation problem.

(13)   Frans fotografeerde <u>de tijger</u> voor het eerst in 1980.

This is an episodic sentence, i.e., a sentence which reports a particular event or situation. The sentence refers to an event in 1980 where Frans took a picture. The 'problem' is that one cannot take a picture of kinds; one can only take a picture of objects of a kind. There is therefore a discrepancy (i.e., a *type mismatch*, see Zamparelli 2002) between the predicate, which does not normally accept kinds and a direct object noun phrase, which denotes a kind.

Before we further discuss the semantics of sentences like (13), let us first try to prove that *de tijger* in (13) has a kind-referring reading (as its most natural reading). Consider (14).

(14)   *De tijger, die   ik voor het eerst   fotografeerde   in 1980, wordt*
       the tiger, which I   for   the first time photographed in 1980, is
       momenteel   met   uitsterven   bedreigd.
       currently   with extinction threatened
       'The tiger, which I took a picture of for the first time in 1980, is currently
       threatened with extinction.'

This sentence demonstrates that the same noun phrase can be the subject of the kind predicate *met uitsterven bedreigd worden* and the antecedent of the subject of a relative clause that is similar to (13). The most straightforward explanation for this phenomenon is that *de tijger* refers to a kind not only in the main clause in (14), in which a kind predicate is used, but also as the antecedent of the relative pronoun in (14) and in the direct object position of (13).[4]

How do language users solve the mismatch between the episodic interpretation of the predicate and the presence of a kind-referring noun phrase? The answer is that speakers assume that the following relation holds between the kind and an object (or objects) of the kind: the specimen(s) that was (were) photographed in

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4.   This argument is inspired by Cohen (1999: 40), who presents sentences showing that the same noun phrase can be used in a clause with a kind predicate and in a characterizing clause. He concludes that such a noun phrase refers to a kind in both clauses.

1980 is (are) representative of the species. That is why the term *representative object reading* is used for this type of interpretation.

3.3.2 Representations

Now I move on to the question of how the semantics of sentences like (13) can be represented. The mismatch in such sentences (cf. 3.3.1) can be resolved by using a *realization relation*: a relation which links the instances of a kind with the kind itself. In the literature, this relation has been implemented in a number of ways. Carlson (1977) proposed a realization relation R between an individual instance and a kind. Thus, for example, R(x,↑**dodo)** expresses that x is an object of the kind ↑**dodo**. In this book, I make use of Cohen's (1999: 46) variant of this proposal. Cohen argues that the sets of instances relevant for the interpretation of a sentence vary from case to case. Sometimes, as in characterizing sentences such as (3), repeated as (15), the sentence generalizes about single individuals.

(15)   *De vliegenzwam heeft een rode hoed met witte stippen.*

Sometimes, as in sentences like (16), the sentence expresses a generalization about *groups* of objects/individuals (in this case elephants).

(16)   *Olifanten verzamelen zich in enorme   kuddes.*
        elephants congregate REFL in enormous herds
        'Elephants congregate in enormous herds.'

This illustrates that, instead of Carlson's unitary realization relation, we need a multitude of such relations. Cohen (1999: 46) refers to each realization relation as a *coordinate* and gives the following definition of this concept:

> "Let $C(\kappa)$ be the property of being an instance of the kind κ with respect to the coordinate C; C may be the *specimen* coordinate, decomposing a kind into its individual instances, or the *group* coordinate, decomposing a kind into the groups of its instances, etc. Then $C(\kappa)$ would be a property; $C(\kappa)(x)$ would hold just in case x is an instance of κ with respect to the coordinate C."

Cohen (1999) does not discuss the representation of representative object sentences. My proposal is that sentences such as (13) can be represented as in (17).

(17)   ∃x [C(↑**tijger**)(x) & **fotograferen(Frans,x)**]
        'there is an object of the kind corresponding to *tijger* which is representative
        of the kind and which has been photographed by Frans.'

Oosterhof (2003, 2006a, to appear) assumes that in such sentences the variable x in C(↑**tijger**)(x) is bound by an existential quantifier. The next question is: What counts as an instance of the kind *de tijger* in (13)? If we assume Cohen's *specimen coordinate*, the kind is 'decomposed' into its individual instances. Under this

assumption, (13) is true if and only if *Frans* has photographed an arbitrary specimen of the species. However, sentences like (13) get a reading in which the object in the situation described is representative of the kind. A plausible extension of Cohen's theory is that in such sentences C stands for the *representative object coordinate*. Let us assume that this coordinate 'decomposes' a kind into representative instances. This means that C($\uparrow$**tijger**)(x) holds just in case x is a representative object of the kind. Thus, we predict that sentence (17) is true if and only if *Frans* has taken a picture of a representative object of the kind. This is an accurate formulation of the semantics of (13).

3.4　Characterizing property interpretation

In sentences like (15) and (18) (cf. (1b) and (2b) in chapter 2) the two phenomena associated with genericity (characterizing sentences and kind reference) are combined: the subject noun phrase is a kind-referring noun phrase and the sentence is of the characterizing type.

(18)　a.　*De Zwitser eet graag chocolade.*
　　　　　The Swiss　eats ADV　chocolate
　　　　　'The Swiss like to eat chocolate.'
　　　b.　*De egel　　leidt een eenzaam bestaan.*
　　　　　'The hedgehog leads a　lonely　life.'

Krifka et al. (1995: 81) label this case as the *characterizing property interpretation*, "to indicate that the property expressed by the verbal predicate must be characterizing for the objects of the kind".

3.4.1　Definite singulars

3.4.1.1　*Observations*
Why do we assume that definite singulars such as the subject noun phrases in (18) refer to kinds? Recall that sentence (7), repeated as (19), illustrates that definite singulars can be kind-referring noun phrases.

(19)　*De dodo is uitgestorven.*

However, it is possible that definite singulars refer to kinds in kind predicate sentences like (19), but not in characterizing sentences like (18). Sentences like (20) demonstrate that this is not the case and that definite singular noun phrases refer to kinds not only in sentences in which a kind predicate is used, but also in characterizing sentences (cf. also chapter 1).

(20)　*De dodo leefde in Mauritius en　(hij) stierf uit in 1681.*
　　　　'The dodo lived in Mauritius and (it)　died out in 1681.'

In (20), one and the same noun phrase is used in a characterizing sentence and is the antecedent of the subject of a kind predicate. This phenomenon can be straight-forwardly explained by assuming that definite singulars refer to kinds in sentences with kind predicates as well as in characterizing sentences (see Cohen 1999: 40).

Characterizing interpretations and reference to kinds are two independent phenomena. A sentence can receive a characterizing reading independently of whether it contains a kind-referring noun phrase or not. Let me illustrate this point. Suppose that we replaced *de Zwitser* ('the Swiss') in (18a) and *de egel* ('the hedgehog') in (18b) by the indefinite singulars *een Zwitser* ('a Swiss') and *een egel* ('a hedgehog'). Then the sentences would still receive a characterizing read-ing, even though indefinite singulars cannot refer to kinds (as shown in (6)). This shows that the sentences in (18) receive characterizing readings indepen-dently of the interpretations of the noun phrases in subject position. Further-more, a noun phrase can refer to a kind independently of whether the sentence is of the characterizing type. This can be concluded from the discussion in 3.3, where we showed that an episodic sentence can contain a kind-referring noun phrase (cf. (13)).

3.4.1.2   *Representations*
In characterizing sentences like (18), we observe a similar discrepancy as in (13). Let me illustrate this point by referring to (18b). Leading a solitary existence is a property of objects and not of kinds. Yet, *de egel* refers to a kind in the relevant interpretation. Again, the mismatch can be solved by using the relation C, as dem-onstrated in (21).

(21)   GEN[x] [C($\uparrow$**egel**)(x)] [**een-eenzaam-bestaan-leiden**(x)]
'In most cases in which x is an object of the kind corresponding to *egel*, x leads a lonely life.'

C($\uparrow$**egel**)(x) holds if and only if *x* is an instance/object of the kind denoted by *de egel*.

Sentence (18b) expresses a generalization about hedgehogs in general and not only about representative objects. This can be captured by assuming that C in (21) stands for Cohen's (1999) *specimen* coordinate, decomposing a kind into its individual instances.

3.4.2   Bare plurals

The reader may have noticed that there is a potential conflict between the discus-sion in this chapter and that in chapter 2. In chapter 2, we followed Krifka et al. (1995) in assuming that in sentences like (22) bare plurals introduce a variable and provide a restriction to it through the predicate of being a hedgehog or a Swiss.

(22)   a.   *Zwitsers   eten graag chocolade.*
               Swiss   eat ADV chocolate
               'Swiss people like to eat chocolate.'
        b.   *Egels   leiden een eenzaam bestaan.*
               'Hedgehogs lead   a   lonely   life.'

This is illustrated in (23), where a semantic representation of sentence (22b) is given.

(23)   GEN[x] [**egel**(x)] [**een-eenzaam-bestaan-leiden**(x)]
        'In most cases in which x is a hedgehog, x leads a lonely life.'

Yet, bare plurals can be used in the subject position of kind predicates. Example sentences were presented in (5), repeated as (24) (but cf. note 1).

(24)   a.   *Dodos zijn uitgestorven.*
        b.   *Vaste telefoons worden met uitsterven bedreigd.*

    We might propose that bare plurals unambiguously refer to kinds, just like definite singulars. This would mean that (21) is the only possible representation for sentences like (22b). However, there is strong evidence against this view. In chapter 6, we will discuss some facts that can only be explained if bare plurals are ambiguous between a reading in which they refer to a kind (cf. (21)) and a reading in which they do not refer to a kind (cf. (23)). One argument in favour of this hypothesis is that there are speakers for whom sentences like (24) are unacceptable (cf. note 1). At the same time, characterizing sentences like (22) are undoubtedly acceptable. The fact that there are speakers for whom (22) is acceptable and (24) is unacceptable cannot be accounted for if we assume that bare plurals unambiguously refer to kinds. We have to assume that bare plurals receive a second reading, in which they do not refer to a kind, but introduce a variable that can be bound by GEN. This makes it possible to assume that speakers who judge the sentences in (24) unacceptable only assign the latter reading to bare plurals. As a consequence, the sentences in (22) can be acceptable, even though the sentences in (24) are unacceptable (see chapter 6 for further discussion).

3.5   Taxonomic kind-referring noun phrases

3.5.1   Observations

In 3.2, we assumed that (7) and (8), repeated as (25) and (26), are semantically similar.

(25)   *De dodo is uitgestorven.*

(26)   *Einstein was schrander.*

The semantics of both sentences corresponds to a predicate-argument structure, the only difference being that while the subject in (25) refers to a kind, the subject in (26) refers to an object. In our domain of interpretation, kinds and objects play the same semantic role: they both correspond to entities. This assumption only makes sense if kinds and objects are similar from the perspective of the syntax-semantics interface – that is, if the same strategies can be used to attribute properties to both kinds and objects. In this light, it is relevant that in both examples in (25) and (26) it is possible to use a subject-predicate structure which semantically corresponds to a simple predicate-argument structure.

Adopting a uniform approach to kinds and objects, we predict that it is possible for quantificational elements to range over sets of kinds as well as over sets of objects. The latter possibility is illustrated in (27).

(27)   a.   *Er*   *zijn twee mannen ziek.*
             'There are two men   ill.'
      b.   *Er*   *zijn geen mannen ziek.*
             'There are no   men   ill.'
      c.   *Sommige   mannen zijn ziek.*
             'Some   men   are ill.'
      d.   *Iedere man is ziek.*
             'Every man is ill.'

The determiners *één*, *deze*, *sommige*, *iedere* quantify over sets of (individual) men.

Can such determiners range over sets of kinds as well? The examples in (28) show that this is possible.

(28)   a.   *Er*   *worden twee walvissen met uitsterven bedreigd.*
             There are   two whales   with extinction threatened
             'Two whales are threatened with extinction.'
      b.   *Er*   *worden geen walvissen met uitsterven bedreigd.*
             There are   no   whales   with extinction threatened
             'No whales are threatened with extinction.'
      c.   *Sommige walvissen worden met uitsterven bedreigd.*
             Some   whales   are   with extinction threatened
             'Some whales are threatened with extinction.'
      d.   *Iedere walvis wordt met uitsterven bedreigd.*
             every   whale is   with extinction threatened
             'Every whale is threatened with extinction.'

The subject noun phrases in these sentences are called *taxonomic* kind-referring noun phrases. The characteristic property of such noun phrases is that the common noun (in this case *walvis*) is interpreted as a predicate applying to kinds, namely to kinds of whales.

The sentences in (27) and (28) show that the same strategies can be used to attribute properties to both kinds and objects. Krifka et al. (1995: 74) put it as follows:

> "taxonomic NPs show the whole gamut of syntactic behaviour that we observe with every count noun: we find singular indefinites like *a whale*, bare plurals like *whales*, NPs with numerals like *one whale* (…), NPs with demonstratives like *this whale*, NPs with definite article[s] like *the whale which was most recently put under protection* and quantified NPs like *every whale*."

3.5.2   Representations

How can the semantics of sentences like those in (28) be described and represented? Krifka et al. (1995: 77) do not really answer this question. They propose a 'taxonomic subkind relation T':

> "**T**(x,y) mean[s] that x is a subkind of y. This is reminiscent of our previously mentioned realization relation **R**(x,y): x is an instance of y."

However, Krifka et al. do not explain how this relation can be used to represent taxonomic kind-readings and, more importantly, how its application can be restricted.[5]

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5.   A possible implementation of the taxonomic subkind relation is illustrated in (i) and (ii). The representation in (ii) might be a way to represent sentence (i).

(i)   *Er   zijn walvissen   met   uitsterven bedreigd.*
       There are whales   with extinction threatened
       'There are whales threatened with extinction.'

(ii) $\exists x[T(x,\uparrow\textbf{walvis})$ & **met-uitsterven-bedreigd**$(x)]$
        'There is a subkind x of the kind corresponding to *walvis* that is
        threatened with extinction.'

One might, however, wonder whether this assumption does not deliver too many readings. Consider sentence (iii) below. There is nothing which prevents us from representing this sentence as in (iv). However, speakers of Dutch do not assign this interpretation to sentences like (i). Recall that in section 3.2 we argued that kind predicates like *uitgestorven zijn* ('be extinct') can be directly predicated of kinds, as represented in (v). The reading represented in (v) is the interpretation that speakers assign to sentence (iii). So, the suggestion illustrated in (ii) is uneconomical and inaccurate, since it predicts an ambiguity that does not reflect linguistic reality.

(iii)   *De   dinosaurus   is uitgestorven.*
         'The dinosaur   is extinct.'

(iv)   GEN[x] [T(x,$\uparrow$**dinosaurus**)] [**uitgestorven**(x)]
        'In most cases in which x is a subkind of the kind $\uparrow$**dinosaur**, x is extinct.'

(v)   **uitgestorven**($\uparrow$**dinosaurus**)
       'The kind corresponding to *dinosaurus* is extinct.'

Taxonomic kind-referring noun phrases must be represented in a way that reflects the fact that the same strategies can be used to attribute properties to both kinds and objects. The following description from Longobardi (2001: note 6) provides a useful starting point (cf. also 3.5.1): "[B]y 'taxonomic' I refer to readings where the denotation of the nominal ranges over kinds (subkinds) rather than objects." This implies that a common noun is (or can be) ambiguous between a reading in which it denotes a set of objects and a reading in which it denotes a set of kinds. For example, *whale* is ambiguous between a reading in which it denotes a set of individual whales (cf. (29)) and a reading in which it denotes the set of kinds of whales (cf. (30)).

(29)   *Er   zwemmen hier walvissen (namelijk Walli, Moby Dick en   Keiko).*
         there swim   here whales   (namely   Walli, Moby Dick and Keiko)
         'There are whales swimming here (namely Walli, Moby Dick and Keiko).'

(30)   *Er   komen hier walvissen voor (namelijk de blauwe vinvis, de potvis*
         there occur here whales   PRT (namely the blue   whale the sperm whale
         en   de orka).
         and the killer whale)
         'There are whale species found here (namely the blue whale, the sperm whale and the killer whale).'

Notice that kinds of whales can be seen as subkinds of the kind ↑**walvis** (cf. the citation from Longobardi 2001 above).

So, we assume that the contrast between (29) and (30) is not the result of the presence of a taxonomic subkind relation in (30), but of the denotations of the common nouns. In both cases the common noun denotes a set of entities, the difference being that in the case of taxonomic kind-referring noun phrases, these entities are kinds. Under this assumption, we expect determiners and other (quantificational) elements to interact with common nouns denoting sets of kinds in the same way as with common nouns referring to sets of objects, which is the desired result.

In this approach, the semantic representation of sentences such as (27), repeated in (31), is analogous to the representation of the sentences in (28), repeated in (32).

(31)   a.   *Er zijn twee mannen ziek.*
         b.   *Er zijn geen mannen ziek.*
         c.   *Sommige mannen zijn ziek.*
         d.   *Iedere man is ziek.*

(32)   a.   *Er worden twee walvissen met uitsterven bedreigd.*
         b.   *Er worden geen walvissen met uitsterven bedreigd.*
         c.   *Sommige walvissen worden met uitsterven bedreigd.*
         d.   *Iedere walvis wordt met uitsterven bedreigd.*

This is illustrated in (33) and (34), where (first-order) logical representations are given of the sentences in (31) and (32).

(33) a. $\exists 2x[\mathbf{man}(x) \ \& \ \mathbf{ziek}(x)]$
          'There are (at least) two x such that x is an ill man.'
      b. $\neg\exists x[\mathbf{man}(x) \ \& \ \mathbf{ziek}(x)]$
          'It is not the case that there is an x such that x is an ill man.'
      c. $\exists x[\mathbf{man}(x) \ \& \ \mathbf{ziek}(x)]$
          'There is an x such that x is an ill man.'
      d. $\forall x[\mathbf{man}(x) \rightarrow \mathbf{ziek}(x)]$
          'For all x such that x is a man, x is ill.'

(34) a. $\exists 2x[\mathbf{walvis'}(x) \ \& \ \mathbf{met\text{-}uitsterven\text{-}bedreigd}(x)]$
          'There are (at least) two x such that x is a kind of whale threatened with extinction.'
      b. $\neg\exists x[\mathbf{walvis'}(x) \ \& \ \mathbf{met\text{-}uitsterven\text{-}bedreigd}(x)]$
          'It is not the case that there is an x such that x is a kind of whale threatened with extinction.'
      b. $\exists x[\mathbf{walvis'}(x) \ \& \ \mathbf{met\text{-}uitsterven\text{-}bedreigd}(x)]$
          'There is an x such that x is a kind of whale threatened with extinction.'
      c. $\forall x[\mathbf{walvis'}(x) \rightarrow \mathbf{met\text{-}uitsterven\text{-}bedreigd}(x)]$
          'For all x such that x is a kind of whale, x is threatened with extinction.'

I will give an informal description of the quantifier in (33a) and (34a); nothing crucial rests on the formal details. '$\exists 2x\Phi(x)$' means that there are (at least) two x satisfying Φ (cf. for example de Jong, Oversteegen & Verkuyl 1988: 113). The quantifiers in the other representations are more standard. The predicate **walvis'** in (34) corresponds to the set of kinds of whales. So, **walvis'**(x) means that x is a kind of whale. Since in (32) as well as in (31) the common nouns denote sets of entities, determiners and other (quantificational) elements can interact with the nouns in (32) in the same way as with the nouns in (31).

On the account presented in this section, the crucial difference between (31) and (32) is that while the common noun in (31) corresponds to a predicate over objects, the noun in (32) corresponds to a predicate over kinds. Common noun denotations play a leading role in our analysis. From this perspective, it would not be surprising if there are common nouns that unambiguously correspond to one of the two readings. According to Krifka et al. (1995: 75), *species*, *hallogen*, *metal* and *alloy* are examples of common nouns which seem to have only a taxonomic reading. This also applies to a Dutch common noun like *diersoort* ('animal species'). Examples of nouns that can only receive non-taxonomic readings are *specimen* ('specimen') and *exemplaar* ('exemplar'). This strengthens our point that common noun denotations determine whether or not the noun phrase takes a taxonomic reading.

3.6   Summary

In this chapter, we have discussed the semantics of kind-referring noun phrases. Kind-referring noun phrases can occur in sentences with kind predicates (cf. (35)), in episodic sentences (cf. (36)) and in characterizing sentences (cf. (37)).

(35)   *De   moerasorchidee   is uitgestorven (in Vlaanderen).*
         'The marsh orchid   is extinct   (in Flanders).'

(36)   *Jan stond oog in oog met de Afrikaanse olifant.*
         'Jan stood face to face with the African   elephant.'

(37)   *De smeerwortel is rijk aan calcium.*
         the comfrey   is rich of   calcium
         'Comfrey plants are calcium-rich.'

The kind-referring noun phrases in these sentences directly refer to one particular kind. In this respect, they are similar to proper names like *Loxodonta africana* (the scientific name for the African elephant).

We have assumed that kinds and objects play the same semantic role: they both correspond to entities. This only makes sense if kinds and objects are similar from the perspective of the syntax-semantics interface and if the same strategies can be used to attribute properties to both kinds and objects. Sentences like (38) show that quantificational elements can range over sets of kinds in the same way that they can range over sets of objects.

(38)   *Sommige neushoorns worden met uitsterven bedreigd*
         some   rhinos   are   with extinction threatened
         'Some rhinos (i.e., rhino species) are threatened with extinction.'

The noun *neushoorns* in (38) does not denote a set of objects, but denotes the set of kinds of rhinos. We have referred to such noun phrases as *taxonomic* kind-referring noun phrases.

We have represented noun phrases like those in (35), (36) and (37), which directly refer to a kind, by assuming an operation which maps sets of objects to the corresponding kinds. This operation has been symbolized by an up-arrow (Link 1995). Kind predicates can be directly predicated of such kinds. The resulting representation of (35) is presented in (39).

(39)   **uitgestorven(↑moerasorchidee)**
         'The kind corresponding to *moerasorchidee* is extinct.'

In episodic sentences like (36), there is a mismatch between the predicate, which does not normally accept kinds and a noun phrase which denotes a kind. Such mismatches can be resolved by assuming a realization relation. Cohen (1999)

argues that the sets of instances which are relevant for the interpretation of characterizing sentence vary from case to case. He refers to each realization relation as a *coordinate* C. In sentences like (36), C stands for the *representative object coordinate*. This means that C($\uparrow$**afrikaanse-olifant**)(x) holds just in case *x* is a representative object of the kind corresponding to *Afrikaanse olifant*. The resulting representation of (36) can be found in (40).

(40) $\exists$x[C($\uparrow$**afrikaanse-olifant**)(x) & **oog-in-oog-staan**(**Jan,x**)]
'There is a representative object of the kind corresponding to *Afrikaanse olifant*, with which Jan stood face to face.'

A similar discrepancy appears in sentences like (37): being calcium-rich is a property of individual plants and not of the kind $\uparrow$**smeerwortel**, but the subject noun phrase refers to the kind (under its most natural reading). A representation of (37) is presented in (41).

(41)   GEN[x] [C($\uparrow$**smeerwortel**)(x)] [**rijk-aan-calcium**(x)]
'In most cases in which x is a specimen of the kind corresponding to *smeerwortel*, x is calcium-rich.'

We have assumed that in this case C stands for Cohen's (1999) *specimen* coordinate. This means that C($\uparrow$**smeerwortel**)(x) holds just in case x is an (arbitrary) specimen of the kind.

Finally, we have proposed a semantics of taxonomic kind-referring noun phrases, such as *sommige neushoorns* in (38). Such noun phrases can be represented by assuming that it is possible for common nouns to denote sets of kinds. Under this assumption, we expect determiners and other (quantificational) elements to interact with taxonomic common nouns in the same way as with common nouns referring to sets of objects. A representation of (38) is presented in (42), in which the predicate **neushoorn**' is a predicate true of kinds of rhinos.

(42) $\exists$x[**neushoorn'**(x) & **met-uitsterven-bedreigd**(x)]
'There is an x such that x is a kind of rhino threatened with extinction.'

Empirical perspectives

The empirical base of semantic research

4.1 Introduction

In chapters 2 and 3, we sketched an approach to genericity based on Gerstner-Link & Krifka (1993); Krifka et al. (1995); Link (1995); Carlson (1995); Chierchia (1995, 1998); de Swart (1996); Cohen (1999, 2001); Longobardi (2001); Rimell (2004) and other work in the same tradition(s). Most of the judgements on acceptability in these works are based on the researcher's own intuitions. A limitation of research based on the intuitions of one speaker is that it remains unclear how much variation there is among speakers of the same language. A researcher who claims that his results are representative of Dutch (or another language) in general needs a more extensive empirical base. Investigations of the judgements of groups of informants and corpus studies enable the researcher to draw more representative conclusions.

This chapter discusses and illustrates the merits and demerits of intuition- and corpus-based approaches. Section 4.2 is devoted to a discussion of intuition-based approaches. We will discuss research based on the intuitions of one speaker as well as research based on the judgements of a number of native speakers of the language under consideration. Section 4.3 considers the merits and demerits of corpus approaches. The conclusions are presented in 4.4.

4.2 Intuition-based approaches

4.2.1 Introduction

This section discusses the use of acceptability judgements as a tool for linguistic research.[1] The judgements presented in this book are based on two kinds of intuition-based methods:

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1.   'Acceptability' is the term which characterizes the native speaker's intuitions about linguistic data. 'Grammaticality' and 'well-formedness' are theoretical notions (Chomsky 1965). A sentence is grammatical if it is formed according to the grammar of the language "as formulated by the

– questionnaire-based research into the acceptability judgements of speakers of a number of local (or regional) varieties[2] of Dutch.
– investigations of the acceptability judgements of small groups of native speakers of Standard Dutch (i.e., groups of between 5 and 10 speakers).

In section 4.2.2, we examine some distinctions between different types of intuitive judgements. Section 4.2.3 discusses some advantages and provides some justification for the use of intuitions. Section 4.2.4 is devoted to the limitations of intuition-based approaches. Section 4.2.5 summarizes how intuition-based approaches are used in this book.

4.2.2   Types of intuitions

Wasow & Arnold (2005: 1482, 1489) make a distinction between 'primary' and 'secondary intuitions':

> "Two types of intuitions have played a central role in linguistic research over the past half century. The first, which we will call 'primary intuitions', are simply introspective judgements of a given linguistic expression's well-formedness or of its meaning. The second, which we dub 'secondary intuitions', are intuitions about why a given expression is (or is not) well-formed or has the meaning it has. (…) [I]t is an intuition about how to analyze the unacceptability of a given sentence, not about the acceptability itself."

These authors point out that "investigators in every discipline have intuitions about what constitutes a plausible explanation", but that these intuitions do not "constitute empirical evidence, and their role should be subordinate to primary data" (Wasow & Arnold 2005: 1488). A researcher should not assign a more important role to secondary intuitions. Secondary intuitions will not be discussed further in this chapter.

Primary intuitions can be classified along the following lines:

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linguist" (Haegeman 1994: 7). Haegeman (1994: 8) writes that "[t]he native speaker who judges a sentence cannot decide whether it is grammatical. He only has intuitions about acceptability. It is for the linguist to determine whether the unacceptability of a sentence is due to grammatical principles or whether it may be due to other factors" (emphasis deleted, AO). Grammatical sentences can, for example, be judged unacceptable because the sentence is hard to process. Ungrammaticality is just one of the reasons why a sentence may be unacceptable.

2.   The varieties of Dutch spoken by the informants of the questionnaire study are not necessarily representative of the authentic dialects of their villages or cities. We do not intend to describe the 'purest' form of the dialect. To make sure that readers do not misinterpret the goals of the questionnaire study, I will try to avoid the term 'dialect'.

– one can judge sentences to be unacceptable under any interpretation or under some interpretation(s) (see 4.2.2.1).
– well-formedness intuitions can be categorical or gradient (see 4.2.2.2).

The following sections discuss some implications of the use of different kinds of intuitions.

4.2.2.1   *Acceptability judgements about sentences under certain interpretations*

Sentences can be judged (un)acceptable from a syntactic perspective, but they can be semantically (un)acceptable as well. In the latter case, the acceptability often depends on the interpretation assigned to the sentence. Noël (2003: 8) discusses a potential problem of such acceptability judgements (cf. also Colleman 2006: 195):

> "Most treatments of clausal complementation within the 'functionalist' tradition in linguistics (…) have maintained that different kinds of complement always convey different meanings [i.e., different kinds of complement are well-formed under different meanings, AO]. These meanings are usually illustrated with a few well-chosen construed and decontextualized sentences, accompanied by a couple of starred sentences, i.e., by claims that the meanings of these complements preclude certain matrix verb-complement combinations. Readers are then expected to match these claims about meanings and predictions about what are and what are not possible sentences against their own intuitions and if there is no ensuing disagreement these claims and predictions are taken to be proven. That is to say, they are taken to be proven without having been checked against any kind of linguistic data (other than a couple of individuals' intuitions (…)). (…) Probably no other scientific discipline would take the kind of argumentation presented in these studies seriously (…). Grammaticality judgements (…) can be very idiosyncratic and often do not square with the linguistic reality revealed by corpus data."   (my emphasis, AO)

It is correct that grammaticality and acceptability judgements are idiosyncratic. However, the same problem arises if one wishes to investigate correspondences between form and meaning by carrying out corpus studies. In such studies, the researcher has to determine which interpretations the sentences in his corpus (can) receive and the reader has to trust the idiosyncratic intuitions of the researcher as well. This claim will be illustrated with an example in 4.3.3.1.1.

4.2.2.2   *Gradient well-formedness*

Speakers sometimes find sentences neither acceptable nor unacceptable, but somewhere in between the two. Schütze (1996: 41–48) discusses such subtle judgements. He cites Belletti & Rizzi's (1988) influential work on psych-verbs in Italian and reports that these authors distinguish between "no fewer than seven degrees of grammaticality". An example of a subtle judgement that is relevant to this study

can be found in Broekhuis, Keizer & den Dikken (2003: 609). These authors prefix (1) with an asterisk and a question mark.

(1) *%Dodo's zijn uitgestorven.*
      'Dodos are   extinct.'

This implies that the sentence is relatively ungrammatical. In 4.2.4.1, I will show that other sources consider sentences such as (1) to be well-formed. This indicates that there is inter-speaker variation. In (1), this inter-speaker variation is represented by the symbol '%'. In cases of gradient well-formedness and inter-speaker variation, it is especially important to gather the intuitions of a number of speakers (unless we are exclusively interested in the I-language of one individual, see below).

4.2.3   Justification of the use of the researcher's intuitions

This section provides some justification for the use of acceptability judgements based on the researcher's intuitions. In the introduction to this chapter, we have observed that (most of) the acceptability judgements in the (formal) semantic publications under discussion in this study are based on the researcher's intuitions. This procedure is not unique for (formal) semanticists. Syntacticians working in the generative tradition in general follow the same methodological procedure. Borsley & Ingham (2002: 1) refer to the frameworks that follow this approach as "mainstream theoretical linguistics". They write:

> "Mainstream work is mainly concerned with I-language, the cognitive system un-derlying the ordinary use of language. Various applied linguists have suggested that this is unsatisfactory and that texts are a more appropriate object of study. (…) Kress (1993) (…) is under the impression that mainstream linguists believe that all members of a speech community have the same I-language and use it in the same way, but of course no one believes this. (…) A second important feature of mainstream linguistics is a reliance on native speakers' intuitions as a major source of data. Various applied linguists think this is unsatisfactory, and suggest that corpora of naturally occurring speech and writing are a more satisfactory source of data."   (Borsley & Ingham 2002: 2–3)

The emphasis on I-language,[3] the mentally represented linguistic knowledge of a native speaker of a language (Chomsky 1988), implicitly underlies many theoreti-cal linguistic studies. Sometimes this perspective is made explicit, as in Haegeman (2004: 120):

> *"Uiteraard is niet uitgesloten dat andere sprekers (…) andere oordelen hebben, maar dit is op zich te verwachten vanuit de generatieve visie op de grammatica*

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3.   "I-language" and "competence" can be considered as two terms for the same concept (cf. Adger 2003: 17).

met haar nadruk op de I-language, de interne taal, d.w.z. de competentie van de individuele taalgebruiker."

(Of course it is not impossible that other speakers make other judgements. This is expected from the point of view of generative grammar, with its emphasis on the I-language, the internal language, i.e., the competence of the individual language user.)

Under this perspective, making an acceptability judgement does not necessarily imply that all speakers of a language share it. The ultimate consequence of using the intuitions of one speaker as a tool for linguistic research is that the data are representative only of one idiolect. If we wish to investigate the internal consistency in a system of judgements corresponding to the I-language of one speaker, the best thing we can do is using intuition-based methods.

Subjectivity is (or can be) a welcome aspect of intuition-based results. Corpus results often do not tell us anything about how many (and which) speakers share a judgement. A more appropriate method to describe inter-speaker variation is by using the subjective intuitions of speakers of a language. Such research can be carried out in a systematic fashion by using questionnaires and gathering the intuitions of a number of native speakers (cf. 4.2.5).

Another advantage of intuition-based claims is that they are verifiable to a large degree. This point can be illustrated by sentence (2a). Zwart (1997: 28) claims that the use of *vandaag* in this position is well-formed. He writes that "[t]opicalizations (…) invariably trigger inversion of the subject and the verb in tensed main clauses. The topic(…)-element and the finite verb are strictly adjacent. <u>The finite verb and the subject no longer have to be adjacent</u>" (my underlining, AO). The observation that the topic-element and the finite verb are strictly adjacent is illustrated in (2b). The claim that the finite verb and the subject "no longer have to be adjacent" is illustrated by sentence (2a).

(2) a. *Marie kussen (%vandaag) de jongens vaak.*
         Marie kiss   (today)   the boys   often
         'Mary the boys kiss a lot today.'
     b. *Marie (*vandaag) kussen de jongens vaak.*
         Marie (today)   kiss   the boys   often

Yet, a number of speakers of Dutch consider sentence (2a), in which *vandaag* appears between the finite verb and the subject, to be unacceptable. This conclusion is based on the intuitions of nine native speakers of Dutch. Eight of these nine informants rate the sentence as unacceptable. In this way, the representativity of Zwart's observation can be easily verified by consulting native speakers. In many cases, corpus results are less easily verifiable. Van der Beek (2005) writes:

"In the evaluation step, the good examples are extracted from the total set of candidates. (…) This set will (…) contain sentences which are grammati-

cally fine, but do not contain the linguistic structure under investigation. (…)
On top of that, the corpus is likely to contain a number [of] ungrammatical
sentences. (…) <u>One can conclude that there is still an important role for gram-
maticality judgments in a corpus-based approach: separating the true positives
[i.e., grammatical sentences] from the false positives [i.e., ungrammatical
sentences]</u>."   (van der Beek 2005: 3, my underlining, AO)

In many corpus studies, ill-formed sentences are filtered out from the results.
Usually, it is impossible to verify on the basis of what acceptability judgements
they were excluded (unless a complete list of which sentences are included and
which ones are excluded is available).

4.2.4   A limitation of intuition-based approaches: conflicting intuitions

In section 4.2.3, we saw that an appropriate method of describing the variation in
acceptability judgements is by using the subjective intuitions of native speakers of
a language. This section shows that the subjectivity of acceptability judgements
is not always an advantage, but can also be an important limitation of intuition-
based approaches in some cases.

In 4.2.4.1 and 4.2.4.2, I will demonstrate that four publications, namely Haeseryn
et al. (1997), Devos, De Muynck & Van Herreweghe (1991), Broekhuis, Keizer &
den Dikken (1997) and ter Meulen (1995) make conflicting grammaticality judge-
ments about two types of sentences. This shows that the intuition-based approach
is not a solid basis for drawing general conclusions about Dutch. A researcher who
claims that his results are representative of Dutch (or another language) in general
needs a more extensive empirical base.

4.2.4.1   *Bare plurals in the subject position of kind predicates*
In the literature there is no consensus on the well-formedness of sentences like (3),
in which a bare plural is used in the subject position of a kind predicate.

(3)   a. *%Pinguïns   sterven uit.*
              Penguins   die   out
              'Penguins are dying out.'
        b. *%Olifanten   sterven uit.*
              Elephants die   out
              'Elephants are dying out.'

The well-formedness of sentences like (3) has implications that are more im-
portant than might be obvious at first glance. No one would assume that bare
plurals refer to kinds in characterizing or episodic sentences if sentences like (3)
were ill-formed (cf. the discussion in chapter 3). In varieties of Dutch that do not

accept sentences like (3), bare plurals do not get kind-referential interpretations at all. As a consequence, there would be a one-to-one relation between definiteness and kind reference in such varieties: noun phrases with a definite article refer to kinds, while noun phrases introduced by an indefinite article receive a non-kind-referring reading.

The judgement that sentences like (3) are well-formed can be found in traditionally oriented, descriptive publications, such as Devos, De Muynck & Van Herreweghe (1991), as well as in the (formal) semantic literature, cf. ter Meulen 1995. In Devos, De Muynck & Van Herreweghe (1991: 43), sentence (3a) is not marked with an asterisk. These authors explicitly state that (3a) expresses an assertion about "the kind". So, they consider (3a) acceptable under a kind reading of *pinguïns*. The same judgement can be found in ter Meulen (1995: 356).

The opposite intuition can be found in the literature as well. In the terminology adopted by Haeseryn et al. (1997) a noun phrase is 'generic' if it can be combined with a kind predicate. Haeseryn et al. (1997: 812) assume that bare plurals do not receive the 'generic' interpretation. This implies that according to this grammar sentences like (3) are ill-formed. A comparable judgement can be found in Broekhuis, Keizer & den Dikken (2003: 609). They present an example sentence in which a kind predicate is combined with a bare plural. The relevant sentence is prefixed with an asterisk and a question mark:

> "The fact that definite noun phrases may refer to the whole class, whereas indefinite noun phrases cannot is clear from the examples in (29). The examples in (29b&c) are semantically anomalous since the predicate *uitgestorven* 'extinct' can be predicated of a species as a whole, but not of the individual members of a species.

> (29) (…) b. *Een [d]odo is uitgestorven. (…)
>   c. *?<u>Dodo's zijn uitgestorven</u>."
>   (my emphasis, AO)

In cases like this, the results of corpus studies can be relevant. Some relevant corpus results will be presented in section 4.3.2.1.

4.2.4.2   *Definite plurals in characterizing sentences*

In this section, I will present a second example of conflicting intuitions. In the literature there is no consensus on the well-formedness of sentences like (4), in which a (non-taxonomic) definite plural is used in the subject position of a characterizing sentence (cf. chapter 3 and below).

(4)   a. *%De olifanten   hebben waardevolle tanden.*
        the elephants have   valuable   teeth
        'Elephants have valuable teeth.'

    b. *%De Amerikanen houden van glamour.*
         the Americans   love   PREP glamour
         'Americans love glamour.'

    c. *%De paarden zijn zoogdieren.*
         the horses   are mammals
         'Horses are mammals.'

    d. *%De zebra's zijn gestreept.*
         the zebras are striped
         'Zebras are striped.'

There are some aspects which make it difficult to judge the acceptability of such sentences. Firstly, note that, in general, sentences such as (4) are more acceptable in contrastive contexts. For example, (4b) is more natural in the following context: *The Canadians do not love glamour, but . . .* A second point has to do with the fact that speakers who do not judge sentences such as those in (4) acceptable under characterizing readings, do judge them acceptable under definite/specific readings. In such readings, *de Amerikanen* in (4b) refers to a contextually determined group of Americans. It can be difficult to distinguish this interpretation from the characterizing reading. Probably, this leads to variation in judgements.

    Ter Meulen and Devos, De Muynck & Van Herreweghe judge characterizing sentences like those in (4) well-formed. Sentence (4a) has been taken from ter Meulen (1995: 356). and (4b) originates from Devos, De Muynck & Van Herreweghe (1991: 43–48).

    The opposite intuition can be found as well. Haeseryn et al. and Broekhuis, Keizer & den Dikken consider sentences like (4) ill-formed under the relevant reading. Sentence (4c) is taken from Haeseryn et al. (1997: 811). Broekhuis, Keizer & den Dikken (2003: 612–613) state that sentence (4d) can only be interpreted as a statement about "a contextually determined group of zebras". According to this source, example (5) is more acceptable, because *grote kat* ('big cats') can be interpreted as "the name of the superset containing the subsets of cats denoted by the nouns *leeuw* 'lion', *tijger* 'tiger', etc. In other words, the noun phrase *de grote katten* does not refer to one, but to several species of animals, hence its plural form" (cf. Broekhuis, Keizer & den Dikken 2003: 612).

(5)   *De   grote katten zijn gevaarlijke roofdieren.*
        'The big   cats   are dangerous predators.'

The relevant interpretation of (5) is available for its English equivalent as well (cf. the English translation). This interpretation is a taxonomic one. Recall that Krifka et al. (1995: 74) observe that taxonomic noun phrases show the whole range of syntactic behaviour that we observe with every count noun (chapter 3). We therefore expect definite plurals to receive taxonomic interpretations, just like other

common noun phrases. So, the fact that Broekhuis, Keizer & den Dikken consider sentences like (4d) and (5) acceptable under a taxonomic reading of the subject phrase does not constitute a problem for the generalization that they find sentences like (4) to be unacceptable under the non-taxonomic characterizing reading.

In section 4.3.2.2, I will present some results of corpus studies regarding the frequency of sentences such as (4). Corpus findings can be interpreted as indirect evidence on whether there are speakers who judge a type of sentence well-formed.

4.2.5   Intuition-based research in this book

4.2.5.1   *Investigations of the judgements of groups of speakers*
In the previous sections, we discussed the merits and demerits of intuition-based results. An important point in that discussion was that intuitions of native speakers are subjective. An advantage of this subjectivity is that inter-speaker variation can be described by using the subjective intuitions of native speakers. In section 4.2.4, we discussed two cases in which conflicting judgements about the well-formedness of the same sentence type are made in the literature. On the basis of these two cases, we can draw the conclusion that the relevant sentences are subject to inter-speaker variation. Usually, this type of evidence (i.e., conflicting intuitions in the literature) is not available. In such cases, we have to collect the acceptability judgements of a group of native speakers.

In general, the judgements presented in this book are not meant to represent an idiolect. If there is evidence that there is variation among speakers, this is indicated by using the symbol '%'. This symbol indicates that there are speakers who consider the sentence acceptable, while others consider the sentence unacceptable (under the relevant reading). In many cases, such claims about inter-speaker variation will be based on investigations of the judgements of groups of between 5 and 10 native speakers. As a consequence of the fact that the results are based on such small numbers of informants, we cannot draw conclusions about what percentages of native speakers of Dutch do and do not accept the sentence types we are interested in. Our findings only indicate whether speakers agree that a sentence is acceptable, agree that the sentence is unacceptable or disagree about the acceptability of the sentence.

4.2.5.2   *Questionnaire-based research*
Questionnaires are an important tool for obtaining acceptability judgements from speakers of a language. In chapter 5, I will present the results of a questionnaire study which did not focus on the variation among speakers of Standard Dutch, but investigated judgements of speakers of local varieties of Dutch. Language users were asked to rate the acceptability of a number of sentences on a scale from 1 to 5,

where the value '1' corresponded to 'completely unacceptable' and the value '5' corresponded to 'fully acceptable'. This scale has been used in many other recent studies as well (cf. Van Craenenbroeck 2004, Hoeksema & den Ouden 2005 and Clifton, Fanselow & Frazier 2006, among many others).

Whether this method is the most appropriate and sensitive method to investigate acceptability judgements is a question which has generated some debate. Bard, Robertson & Sorace (1996: 35) write that there is a

> "disproportion between the fineness of judgements people can make and (…) the five-point scale often used in empirical studies or indeed to any other scale that predetermines the number of distinctions (…). There is no way of knowing in advance if our sensitivities are limited to a five-way distinction any more than a four-way distinction."

They show how magnitude estimation, a technique used in psychophysics, can be adapted for eliciting acceptability judgements. Magnitude estimation, applied to linguistic acceptability, requires the subject (or the experimenter) to associate a numerical judgement with a sentence. Once a number is associated with this initial sentence, the subject assigns to each successive sentence a score reflecting its acceptability in comparison with the first sentence. Subjects are instructed to reflect perceived ratios in their judgements: a sentence that appears to be twice as acceptable as the first is to be assigned a score twice the original score.

According to Bard, Robertson & Sorace (1996: 41), this technique has some important advantages over more traditional methods, like the five-point scale often used in empirical studies: "(…) [I]t does not restrict the number of values which can be used (…). Subjects decide whether each stimulus should be assigned the same number as another stimulus or a different number, and they have complete freedom about which of the infinite set of numbers to use." An application of this technique can be found in Alexopoulou & Keller (2007).

Although the technique of magnitude estimation offers interesting opportunities for the (future) empirical study of (Dutch) generics, it is not applied in the questionnaire study presented in chapter 5. The results of our study are based on the 5-point scale. The 5-point scale is still the prevailing method in contemporary semantic and syntactic theory and has been (successfully) applied in the study of Dutch dialects (cf. Van Craenenbroeck 2004).

4.3   Corpus-based approaches

4.3.1   Introduction

There has been much discussion about the role of corpora in (theoretical) linguistics. Verkuyl (1998: 63) defends the Anti-Corpus-axiom:

> "[H]et nut van corpora voor het doen van taalkundig onderzoek is zo minimaal, dat het zonde van de tijd is om ze statistisch te gebruiken" (The benefit of corpora for linguistic research is so minimal, that it is a waste of time to use them statistically)

In a later edition of the same journal (*Nederlandse taalkunde*), Baayen (1998) argues against this axiom and claims that careful and statistically valid corpus research is relevant to many issues of theoretical linguistics (see also Kruyt 1998). Other debates between corpus-oriented and introspective linguists can be found in Borsley & Ingham (2002, 2003) and Stubbs (2002) and in Newmeyer (2003, 2005), Clark (2005), Laury & Ono (2005) and Meyer & Tao (2005).

Chomsky's (1957, 1965) main objection against using corpus data is that according to him the linguist must seek to model language competence rather than performance. This brings us to the essence of Chomsky's criticism: A corpus is a collection of externalized utterances; it provides performance data, and as such it is a poor guide to investigating linguistic competence (McEnery & Wilson 2001). How far-reaching the consequences of this argument are depends on one's commitment to the Chomskyan view on the main task of the linguist.

Section 4.3.2 is devoted to the advantages of corpus data. Section 4.3.3 discusses some drawbacks of corpus-based methods. Section 4.3.4 discusses how corpus-based approaches are used in this book.

4.3.2   Advantages of corpus-based results

In section 4.2.4, we presented two examples of conflicting judgements made by linguists judging the well-formedness of the same sentence type. The relevant sentence types are kind predicate sentences with bare plural subjects (cf. (3), repeated as (6)) and characterizing sentences with definite plural subjects (cf. (4), repeated as (7)).

(6)   a.   *%Pinguïns sterven uit.*
      b.   *%Olifanten sterven uit.*

(7)   a.   *%De olifanten hebben waardevolle tanden.*
      b.   *%De Amerikanen houden van glamour.*
      c.   *%De paarden zijn zoogdieren.*
      d.   *%De zebra's zijn gestreept.*

We have argued that conflicting judgements are unavoidable when using intuition as a tool for linguistic research. A more extensive empirical basis is needed if a researcher claims that his results are representative of a language. Gathering the intuitions of a number of speakers enables the researcher to draw more representative conclusions. In the following sections, I will illustrate that corpus-based approaches are a second method to obtain more representative conclusions about whether speakers of a language consider a certain sentence type well-formed.

4.3.2.1   *Bare plurals in the subject position of kind predicates*
This section presents the results of a corpus study into the frequency of definite singular, definite plural, indefinite singular and bare plural common noun phrases in subject position of *uitsterven*. The results are based on three corpora: the *INL 27 Miljoen Woorden Corpus 1995*, the *INL 38 Miljoen Woorden Corpus* and the *CONDIV*-corpus.[4] These corpora consist of written material (academic prose, legal texts, other official documents, 'written to be spoken' material, material from magazines, newspapers and non-fiction books and internet language from chat channels and discussion groups). The total corpus contains approximately 110 million words.

The total corpus contains 60 sentences in which the verb *uitsterven* is used with a count noun phrase in subject position. Sentences in which *uitgestorven* can be analysed as a predicatively used adjective have also been included. All these sentences originate from texts published in the period 1970–2000. The results are presented in table 5.1.[5]

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4.   The *INL*-corpora are made available by the Institute for Dutch Lexicology (INL). The *CONDIV*-corpus was developed within the VNC-project *Lexical variation in standard Dutch* (see Grondelaers et al. 2000).

5.   Table 5.1 shows that definite plurals frequently occur in sentences in which *uitgestorven zijn* ('be extinct') or *uitsterven* ('die out') is used. Some example sentences can be found in (i). According to Haeseryn et al. (1997: 811) this type of sentence is "dubious". The data presented here show that there are probably speakers of Dutch who do not agree with this judgement. Sentences like those in (i) indicate that definite plurals have a kind-referential interpretation (and do not unambiguously receive definite/specific readings).

(i)   a.   *In België   zijn de flankspelers uitgestorven. Spijtig,   maar we*
            in Belgium are the wingers   extinct   regrettably but   we
            moeten vaststellen dat er   geen meer werden opgeleid.
            must   conclude   that there no   more were   trained
            'In Belgium, wingers are extinct. This is regrettable, but we must
            conclude that no one has been trained to be a winger.'
      b.   *Uit   angst dat de Italianen uitsterven hebben de bisschoppen*
            out of fear   that the Italians die out   have   the bishops
            gepleit   voor gezinnen met een derde kind.
            advocated for families with a   third child
            'Out of fear that Italians will die out, the bishops have recommended that
            families have a third child.'

The sentences originate from *De Standaard*, November 1995 and *NRC Handelsblad*, May 1994.

Table 4.1 The frequency of noun phrase types in subject position of *uitsterven/uitgestorven*

N	definite singular		definite plural		indefinite singular		bare plural	
60	23	38%	28	47%	1	3%	8	13%

In (8), some examples are presented of sentences in which the verb *uitsterven* (or the adjective *uitgestorven*) is used with a bare plural in subject position.

(8) a. *Bevers   waren toen namelijk helemaal   uitgestorven in ons land.*[6]
     Beavers were then ADV   completely extinct   in our country
     'The fact is that in those days beavers were entirely extinct in our country.'

   b. *Wilde otters zijn in ons land   uitgestorven door   de*
     Wild otters are in our country extinct   through the
     milieuvervuiling.
     environmental pollution
     'Wild otters are extinct in our country as a result of environmental pollution.'

   c. *Mammoeten en   dinosaurussen zijn uitgestorven.*
     'Mammoths and dinosaurs   are extinct.'

The set of example sentences in (8) is rather homogeneous. In every sentence, a noun phrase with an animal name is used in the subject position of *uitsterven/ uitgestorven*. In (9) and (10), some additional corpus examples are given, showing that other kind predicates like *voorkomen* ('be found, occur')[7] and *(met uitroeiing) bedreigd worden/zijn* ('be threatened (with extermination)') are also compatible with bare plurals.

(9) a. *IJsberen   komen voor op de Noordpool en in aangrenzende streken,*
     Polar bears occur   on the North Pole and in neighbouring areas,
     met name langs de kusten.[8]
     especially along the coasts
     'Polar bears are found in the Arctic and in neighbouring areas, especially along the coasts.'

   b. *Beren komen voor in Europa, Azië, Noord- en   Zuid-Amerika.*
     Bears occur   in Europe, Asia, North and South America.'

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6.   The examples originate from *Jeugdjournaal*, September 1994, *Jeugdjournaal*, October 1995, *Greenpeace. Kwartaalblad voor donateurs*. Stichting Greenpeace Nederland, 1995, vol.1.

7.   The judgement that *voorkomen* is a kind predicate is subject to inter-speaker variation. One informant reports that according to her *voorkomen* does not necessarily select a kind-referring noun phrase.

8.   The examples originate from Verhoef-Verhallen, Esther. 2001. *Geïllustreerde Wilde Dieren Encyclopedie. De dierenwereld in 800 prachtige afbeeldingen*. Lisse: Rebo International. p. 238 and *De Grote Oosthoek. Encyclopedie en woordenboek*. Utrecht: Oosthoek's Uitgeversmaatschappij. 1976–1981. Volume 3. p. 140.

(10) a. *Tot   enkele jaren geleden waren ijsberen   met uitroeiing*
          until some years ago   were   polar bears with extermination
          bedreigd.[9]
          threatened
          'Until some years ago, polar bears were threatened with extermination.'
      b. *Ook door de verstoring van hun leefgebieden worden*
          Also by   the disruption of   their habitats   are
          roofdieren bedreigd.
          predators threatened
          'Predators are also threatened by the disruption of their habitats.'

In (11), some examples are presented of sentences in which non-biological bare common noun phrases are used in the subject position of kind predicates:[10]

(11) a. *Kreidlers en Nortons waren hier bijna uitgestorven.*[11]
          Kreidlers and Nortons were here nearly extinct
          'Kreidlers and Nortons were nearly extinct here.'
      b. *Roodharige vrouwen zijn met uitsterven bedreigd.*
          red-haired women   are with extinction threatened
          'Red-haired women are threatened with extinction.'
      c. *Onze korte rondgang langs de zusters* (…) *heeft duidelijk*
          our short tour   along the sisters (…) has   clear
          gemaakt dat zij   het heel wat moeilijker   hebben gehad dan
          made   that they it   quite a lot difficult-comp have   had   than
          de broeders. Zusters zijn zeldzaam, dus er   *valt nog heel wat*
          the brothers sisters are rare   so there is   still quite a lot
          achterstand in te halen.
          arrear   up to make
          'Our short tour of talks with the sisters (…) has made clear that they have
          had a rougher time than the brothers. Sisters are rare, so there is still quite
          a lot of arrears to make up.'

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9. The sentences originate from de Jong, Meindert. 1979. *Zoogdieren van Europa*. Aartselaar/
Harderwijk: Zuidnederlandse Uitgeverij/Centrale Uitgeverij. p. 126–127 and van der Straeten,
Erik. 1986 'Biotoopvernietiging'. In: Reinier Akkermans & Dirk Criel. *Roofdieren in België en
Nederland. Een kritische kijk op 9 inheemse soorten*. 's Graveland/Gavere: Stichting Kritisch
Faunabeheer/Nationale Campagne Bescherming Roofdieren (NCBR), p. 8–9.

10. Carlson (1977), among others, treats predicates like *zeldzaam* as kind predicates, although
such "quantificational predicates" are not (fully) ill-formed with indefinite singular subjects (see
Krifka et al. 1995: 95). Importantly, most of the example sentences presented in (8), (9), (10) and
(11) do not contain quantificational predicates. See chapter 8 for more discussion.

11. The sentences originate from: Usenet material from the CONDIV-corpus, the website
http://www.feliks.be/nieuws/index.cfm (November 2005) and *Onze Taal, Maandblad van het
Genootschap Onze Taal*. The Hague. December 1991.

We conclude that although such sentences are not the most frequent sentence type, they occur in performance data. What can be derived from this evidence? The fact that such sentences are actually used by speakers indicates that there are speakers who judge them acceptable. Corpus data do not, however, allow us to draw reliable conclusions about *how many* speakers judge a sentence type to be acceptable. Reliable conclusions about percentages of speakers sharing a judgement can be reached only by carrying out (questionnaire) studies into the intuitions of a number of informants. We cannot conclude from the corpus data presented in table 5.1 that the judgements in the literature are inaccurate. What we understand from the conflicting intuitions from the literature is that there is inter-speaker variation: some speakers of Dutch accept sentences like (6), whereas other speakers judge them unacceptable.

4.3.2.2   *Definite plurals in characterizing sentences*

This section is devoted to a second corpus study, in which we investigate the frequency of definite singulars, definite plurals, indefinite singulars and bare plurals in the subject position of characterizing sentences. Recall that sentences like (7), repeated as (12), are subject to inter-speaker variation.

(12)   a. *%De olifanten hebben waardevolle tanden.*
       b. *%De Amerikanen houden van glamour.*
       c. *%De paarden zijn zoogdieren.*
       d. *%De zebra's zijn gestreept.*

Some speakers consider such sentences acceptable. We therefore predict that sentences of this type can be found in corpora. We will verify whether this prediction is borne out.

Some relevant corpus results can be found in table 45.2. They are based on two corpora:

– A corpus of approximately 29 million words, selected from the *INL 38 Million Words Corpus* and the *CONDIV*-corpus (cf. note 4). The texts originate from four Dutch newspapers (*Meppeler Courant*, *NRC Handelsblad*, *De Telegraaf*, *De Limburger*, 14 million words) and four Flemish newspapers (*De Standaard*, *Gazet van Antwerpen*, *Het Laatste Nieuws*, *Het Belang van Limburg*, 15 million words). The texts were originally published in the period 1990–2000.
– A thematic corpus of about 110,000 words. This corpus, developed by Oosterhof (2003), consists of texts about polar bears, other bears, carnivores and mammals. The material was selected from web sites, books, encyclopaedias and scientific papers. The texts were published in the period 1959–2003.

Table 4.2 The frequency of four types of count noun phrases in the subject position of characterizing sentences

N	definite singular		definite plural		indefinite singular		bare plural	
377	106	28%	**31**	**8%**	43	12%	197	52%

Some examples of characterizing sentences with definite plurals in subject position are presented in (13). These sentences express generalizations about, respectively, bonobos, mute swans, polar bears and Japanese (at least in one of their readings). Note that there is no reason to assume that the subject noun phrases in these sentences receive taxonomic interpretations.

(13)   a.   *Ellen Van Krunkelsven met   een bonobo: << <u>De bonobo's</u> kennen*
            ellen van krunkelsven with   a   bonobo: the bonobos know
            geen machogedrag.   Bij hen   ligt de macht bij de wijfjes. >>[12]
            no   macho attitude by them lies the power by the females
            'Ellen Van Krunkelsven with a bonobo: << Bonobos do not show macho
            attitudes. Females are in power. >> '
        b.   *(…) Nu heb ik al   ettelijke stervende zwanen meegemaakt,*
            (…) now have I   already several dying   swans   witnessed
            maar de eerste toon moet ik daarbij nog horen. Zwanen beschikken
            but   the first   tone must I thereby still hear   swans   dispose
            over weinig vocale mogelijkheden en   vooral   <u>de knobbelzwanen</u>
            of   few   vocal   possibilities   and especially the mute swans
            zijn niet bijzonder   begaafd.
            are not particularly talented
            'In fact I have already witnessed several dying swans, but I still have to hear
            the first sound. Swans dispose of few vocal possibilities and especially mute
            swans are not particularly talented.'
        c.   <u>*De Japanners*</u> *zijn gek   op walvissenspek.*
            the Japanese   are fond of blubber
            'Japanese are fond of blubber.'
        d.   *Dit alles maakt de ijsbeer   tot een onvermoeibare zwemmer.*
            this all   makes the polar bear to a   indefatigable   swimmer
            De lengte bereikt af   en toe 2–2,80 m en   het gewicht
            the length reaches now and then 2–2.80 m and the weight

> *schommelt, (…) tussen 400 en   700 kg.* <u>*De ijsberen*</u>   *leiden*
> fluctuates between   400 and 700 kg. the polar bears lead
> *een uitgesproken zwervend leven en   soms   worden ze*
> an undeniably roaming life   and sometimes are   they
> *ontdekt   op ijsschotsen die 300 km ver in zee drijven.*
> discovered on ice floes   that 300 km far in sea drift
> 'All this makes the polar bear an indefatigable swimmer. The length
> sometimes reaches 2–2.80 m and the weight fluctuates (…) between 400
> and 700 kg. Polar bears undeniably lead a roving life and they are
> sometimes discovered on ice floes drifting 300 km out to sea.'

These results show that definite plurals can be used under characterizing readings. This can be interpreted as evidence that there are speakers who find such sentences acceptable. Again, we cannot conclude from this that the judgements in the literature are inaccurate. The corpus results only show that judgements in the literature are not necessarily representative of a language as a whole.

4.3.3   Limitations and drawbacks of corpus-based approaches

4.3.3.1   *Subjective aspects of corpus research*
In section 4.2, we claimed that some of the arguments that have been raised against intuition-based approaches apply to corpus research as well. A widespread criticism of intuition-based research is that it is subjective and biased by the view of the linguist (cf. sections 4.2.2, 4.2.3, see also Schütze 1996: 1). However, much corpus research is biased by the view of the linguist as well. We will argue that the decision that a corpus sentence receives a certain interpretation is, at least to some extent, subjective (cf. 4.3.3.1.1). The same holds for the decision that a corpus example is ill-formed and should not be included in the results (cf. 4.3.3.1.2).

4.3.3.1.1 *Judgements about the interpretations of corpus sentences.*   In section 4.2.2.1, we cited Noël (2003: 8), who states that judgements about the interpretations of sentences (or constituents) can be very idiosyncratic. We claim that the same problem arises if one wishes to investigate correspondences between form and meaning by carrying out corpus studies. This claim can be illustrated with an example. In Oosterhof (2005), I presented the results of a corpus study into the syntactic differences between ordinary partitives and faded partitives (cf. also de Hoop, Vanden Wyngaerd & Zwart 1990). An example sentence (from de Hoop 1998) is given in (14).

> (14)   *Els at drie   van die   smerige bonbons.*
>   Als ate three of   those filthy   bonbons.
>   'Els ate three of those filthy chocolates.' (ordinary partitive reading)
>   'Els ate eating three filthy chocolates'.   (faded partitive reading)

This sentence is ambiguous between an ordinary and a faded partitive reading. Under the latter reading, the noun phrase can be paraphrased by a plural noun preceded by the embedding determiner (*drie*/'three' in (14)) (cf. Broekhuis, Keizer & den Dikken 2003: 556–557).

How does the corpus linguist know that a corpus sentence has a certain interpretation? In many cases, the pragmatic context of an utterance is an important indication, but the syntactic properties of sentences are also relevant. The relevance of syntactic properties can be illustrated by the example sentence in (15).

(15)   *Je   vindt ze   overal,   van die   mensen die zich op de een of*
       you find   them everywhere of   those people who REFL in the one or
       andere wijze onderscheiden   van   anderen.[13]
       other   way distinguish   from others
       'You can find them everywhere, people who are different from others in one way or another.'

If a partitive construction is not introduced by an (overt) determiner, as in the case of *van die mensen* in (15), the noun phrase usually[14] unambiguously receives a faded partitive reading.

We have to be very careful in using this syntactic criterion when investigating the syntactic differences between ordinary partitives and faded partitives. The use of this criterion has consequences for the conclusions that can be drawn from the study. One of the results of the corpus study presented in Oosterhof (2005) is that 73% of the faded partitive constructions are not introduced by an overt determiner, while ordinary partitives always occur with an overt embedding determiner. But is the conclusion warranted that faded partitives can, and ordinary partitives cannot occur without an overt embedding determiner? Of course, this would be a circular conclusion. It is more accurate to base this particular conclusion primarily on intuition-based evidence.

In a number of cases, the syntactic context does not disambiguate between the two readings (cf. sentence (14)). In some cases where the syntactic context

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13.   The example originates from *Meppeler Courant*, January 1994.

14.   There is a very restricted group of verbs which may appear as transitives or as taking a prepositional phrase with *van* ('of') instead of a direct object. The verbs *eten* ('to eat'), *drinken* ('to drink') and *nemen* ('to take') are examples of this group of verbs (Hoeksema 2003). This means that sentences like (i) are ambiguous between a faded partitive and a reading corresponding to the special partitive construction described by Hoeksema (2003).

   i.   *Els   at   van die   bonbons.*
       els   ate of   those   bonbons
       'Els ate some of those bonbons.'   (partitive reading, cf. Hoeksema 2003)
       'Els ate bonbons.'   (faded partitive reading)

does not disambiguate between the two readings, the pragmatic context provides information about the interpretation of the sentence. However, some cases will remain in which neither the syntactic nor the pragmatic context disambiguates between the two readings. In Oosterhof (2005), 4% of the corpus sentences are judged to be ambiguous between a faded and an ordinary partitive reading. In doubtful cases, the corpus researcher has the final word. His decisions are to a certain degree subjective. The reader has to trust the primary intuitions of the researcher.

4.3.3.1.2 *Ill-formed corpus sentences.*   A corpus does not provide grammaticality judgements. The fact that a sentence is taken from a corpus is not a proof of its well-formedness (and neither of its acceptability) (cf. McEnery & Wilson 2001 and Meurers 2005). This can be illustrated by the following example. According to the literature, sentences like (16), in which a kind predicate is attributed to an indefinite singular subject, are ill-formed (cf. for example Krifka et al. 1995 and see chapter 3).

> (16) #*Een walvis is bijna   uitgestorven.*
>   a   whale is nearly extinct

In 4.3.2.1, we presented the results of a study into the frequency of common noun phrase types in subject position of sentences in which the verb *uitsterven* appears. On the basis of the judgements in the literature, we can formulate the hypothesis that sentences such as (16) do not occur in corpora. This prediction is not borne out. Table 4.1 indicates that we have found one sentence in which an indefinite singular does occur in such a sentence. This sentence is presented in (17).[15]

> (17) *(…) onlangs is er een toeristische boycot afgekondigd tegen Noorwegen.*
>   *(…) Noorwegen (…) weigert de internationale verdragen te ondertekenen die*
>   *de walvisvaart verbieden. Zo'n boycot roept een gevoel op dat verdacht veel op*
>   *nostalgie lijkt. Denk aan de jaren zestig en zeventig en het lijstje van verboden*
>   *vakantielanden ontrolt zich als vanzelf in je hoofd. (…) En nu dan Noorwegen.*
>   *Het is geen toeval dat het om dieren gaat. <u>Een walvis is weerloos en bijna</u>*

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15.   It is, of course, not a coincidence that the indefinite singular occurs in subject position of a coordinate structure, in which the first conjunct corresponds to a characterizing interpretation. Possibly, sentences such as (16), which do not contain coordination, do not occur in corpora. This does, however, not contradict the fact that the judgements in the literature predict the corpus sentence in (17) to be ill-formed.

> *uitgestorven en wie voor zijn lot opkomt, raakt niet in allerlei onoplosbare morele*
> *dilemma's verstrikt; die paar werkeloze vissers kunnen wel omgeschoold* worden.[16]
> 'Recently, a tourist boycott of Norway was announced. (…) Norway (…) refuses
> to sign the international treaties that prohibit whaling. Such a boycott evokes
> a feeling that suspiciously resembles nostalgia. Think back to the sixties and
> seventies and a list of forbidden countries unfolds in our minds. (…) And now
> it's Norway. It is no coincidence that animals are involved. <u>Whales are helpless
> and nearly extinct</u> and whoever stands up for their fate does not get caught up
> in all kinds of unsolvable moral dilemmas; the small number of fishermen who
> will become unemployed can be retrained.'

Yet, (many) native speakers of Dutch deem the underlined sentence in (17) unacceptable. The sentence clearly conflicts with our linguistic competence. This illustrates that performance data give a distorted picture of I-language. I refer the reader to van der Beek (2005: 3) and Colleman (2006: 226–227) for other examples of ill-formed corpus sentences.

A possible methodological approach is to filter out ungrammatical sentences (or to extract only the grammatical ones). This procedure was used by van der Beek (2005) (see section 4.2.3; cf. also Colleman 2006 for some discussion). If we had based the presentation of the results on the set of "grammatical sentences", table 4.1 would have looked as follows:

Table 4.3 The frequency of four types of count noun phrases in subject position of *uitsterven* (on the basis of the alternative methodology)

N	definite singular		definite plural		indefinite singular		bare plural	
59	23	39%	28	47%	0	0%	8	14%

This method has some drawbacks. Under this methodology, the results of the corpus analysis reflect neither linguistic competence nor performance. The results are based on a collection of performance data from which sentences that are not in accordance with the linguistic competence of the author (and possibly other language users) are removed. Conclusions about (among other things) the acceptability or well-formedness of sentence types are obscured if "ungrammatical" sentences are filtered out in an early stage of the research process. Newmeyer (2003: 702) puts it as follows: "[G]rammar is grammar and usage is usage." Corpus research is a method for investigating usage. Data about usage can be interpreted as indirect

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16.   The sentence originates from *NRC Handelsblad*, March 1994.

evidence about grammar, but data about usage should not be 'mixed' with data about grammar.

There could be some legitimate methods to objectify the methodological decision that a sentence is ill-formed. One possibility is that the researcher includes an at first sight "wrong" construction only if it appears several times. Another is that we use dictionaries or grammar books to verify whether a construction is mentioned. However, such a methodology raises questions like: How many attestations in how many sources are enough to conclude that something is not an accidental slip of the pen? In how many dictionaries or other resources must a construction be mentioned in order to be included? It is in principle impossible to answer these questions satisfactorily, because there is no one-to-one relation between, on the one hand, well-formedness or acceptability and the frequency of a construction in a corpus or the fact that it is mentioned in a dictionary or a grammar on the other.

Because of these disadvantages and problems, ill-formed sentences have not been filtered out from the set of sentences on which the results of the corpus studies presented in this book are based. Our corpus results are based purely on performance data.

4.3.3.2   *The absence of sentence types*

A second drawback of corpus research is related to the fact that the set of well-formed sentences of a language is in principle infinite (cf. for example Chomsky 1957). However, the size of a corpus, however large, is restricted. The result of a corpus study is always a limited set of sentences. This raises the following question: "How can a partial corpus be the sole explicandum of an infinite language?" (McEnery & Wilson 2001: 12). We do not know whether a sentence type that was not found is unacceptable or did not occur in the corpus by coincidence. So, there is still an important role for acceptability judgements (Borsley & Ingham 2002: 5).

This fact has implications not only for syntactic studies but also for semantically oriented research. Suppose that a corpus does not contain sentences in which an indefinite singular is used in subject position of a kind predicate (cf. (16)). From this result alone we cannot conclude that such sentences are unacceptable. Whether a sentence is unacceptable is determined by the judgements of language users.

The same point can be made by referring to the results of a corpus study into the distribution of a negative polarity item (cf. Hoeksema 2004, cited in Oosterhof 2003–2004). The expression *het feest gaat door* ('the event will take place'), in which *feest* ('party') is to be interpreted metaphorically, is an example of an idiom that is sensitive to polarity. Hoeksema's (2004) material contains 56 examples of this idiom. In all these sentences, the trigger *niet* ('not') occurs. See (18) for an example sentence.

(18)   *Liefst*   *115 miljoen dollar wilde   Ellison schenken aan Harvard*
         as much as 115 million dollar wanted ellison   donate   to   Harvard
         University   maar helaas,   *het feest   gaat niet   door.*[17]
         University, but   unfortunately the party   goes not   through
         'Ellison wanted to donate as much as 115 million dollars to Harvard University,
         but this plan does not go through.'

The fact that in each of Hoeksema's corpus sentences the trigger *niet* ('not') oc-
curs is an important indication that *het feest gaat door* is a negative polarity item.
It is, however, known from the literature that many negative polarity items do not
occur exclusively in purely negative contexts. Giannakidou (1998) argues that an
item is a negative polarity item if it occurs in (a subset of the set of) "nonveridical"
contexts (cf. also Zwarts 1995). A context is "nonveridical" if and only if the event
described in the context is not asserted to occur (see Giannakidou 1998 for further
details). This notion can be illustrated by sentence (19a). The conditional sentence
als dat feest doorgaat is a nonveridical context, since (19a) does not entail that the
event referred to by *dat feest* takes place. The same holds for (19b), in which the
intensional verb *hopen* ('to hope') is used.

(19)   a.   *Als dat feest doorgaat,*   *slaan we een flinke slag.*
               if   that party goes through make we a   good   deal
               'If that event takes place, we will make a good deal.'
         b.   *Ik hoop dat dat feest doorgaat.*
               I   hope that that party goes through
               'I hope that the event will take place.'

The sentences in (19) are acceptable.

Furthermore, van der Wal (1996) observes that certain negative polarity items
are occasionally encountered in sentences that are *emphatically* affirmative, due
to the presence of (stressed) adverbs such as *wel* ('indeed') (which illustrates that
Giannakidou's view may be too narrow). An example sentence is presented in (20).

(20)   *Dat feest   gaat WEL door*
         that party   goes ADV   through
         'That event will take place indeed.'

Sentences like (19) and (20) do not occur in Hoeksema's corpus. However, we
cannot conclude from their absence in Hoeksema's corpus that they are ill-formed
or unacceptable.

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17.   This sentence originates from http://www.pmmblognoot.nl/2006/06/larry_ellison_t.html
(August 2006).

Our conclusion must be that corpus studies do not provide a complete picture of semantic (and other) phenomena. Linguistic intuitions continue to play an important role in interpreting corpus results and describing the semantics of natural language.

4.3.4   Corpus-based approaches in this book

We have seen that it is difficult to draw reliable conclusions about acceptability on the basis of corpus data. The fact that a sentence occurs in a corpus does not guarantee that the sentence is acceptable and the fact that a sentence does not appear in a corpus does not guarantee that it is unacceptable. This is not to say that there is no relation at all between corpus results and acceptability judgements. A plausible hypothesis is that if a sentence type occurs frequently in a corpus, there are a number of speakers who judge the sentence type acceptable. It is, however, not clear how frequently it has to occur before we can draw this conclusion. Another plausible hypothesis is that if a sentence X is judged acceptable by more speakers than a sentence Y, it is reasonable to expect that sentence X occurs more frequently in corpora than Y. Corpus data, however, do not permit clear conclusions about the percentage of speakers that consider the sentence acceptable. Because of the limitations of corpus research, (many of) the conclusions we will draw about acceptability and variation among speakers are verified by intuition-based approaches. Corpus data are important in this book because corpus studies can reveal frequency differences between sentence types, which can be relevant to theoretical proposals.

4.4   Summary and conclusions

In this chapter, we have discussed the empirical basis of semantic research. We have reviewed the merits and problems of introspection-based and corpus-based approaches.

Judgements about the interpretation and the acceptability of sentences are, at least to a considerable extent, subjective. The intuitions of one speaker are not necessarily representative of the language as a whole, but they are representative of the I-language of the individual speaker. We have argued that the subjectivity of intuitions is a welcome aspect of intuition-based research: the subjective intuitions of native speakers of a language are an appropriate method for investigating inter-speaker variation.

Corpus results often do not tell us anything about inter-speaker variation. They do not provide an appropriate basis for drawing conclusions about how

many (and which) speakers share a judgement. Another limitation is that there is no one-to-one relation between the occurrence of a sentence type in a corpus and the acceptability of the sentence type. Yet, there are some situations in which we can draw conclusions about acceptability. For example, if a sentence type occurs frequently in a corpus, this is an indication that there are speakers who judge the sentence type acceptable. In general, however, the relevance of corpus approaches to the issue of acceptability and variation among speakers is limited. In the present study, (many of) the conclusions about acceptability and variation are verified by an investigation of the judgements of groups of speakers.

Corpus- and questionnaire-based studies

5.1   Introduction

In this chapter, I present the results of three corpus studies (cf. sections 5.2, 5.3 and 5.4) and a questionnaire study (cf. 5.5). The corpus studies investigate the frequencies of different noun phrase types in characterizing sentences. The questionnaire study investigates the acceptability of a number of characterizing and kind predicate sentences.

There are distributional differences between definite singulars and bare plurals. Definite singulars are more restricted than bare plurals. This phenomenon is illustrated in (1).

(1)   a.   *??Het zoogdier heeft tamelijk goede ogen.*
               'The mammal has   rather   good eyes.'
       b.   *Zoogdieren hebben tamelijk goede ogen.*
               'Mammals   have   rather   good eyes.'

Intuitively, (1a) is less acceptable than (1b). Carlson (1977: 275) writes about the use of definite singulars in sentences like (1a): "One of the mysteries surrounding this construction – one that will remain a mystery here – is that its productivity is in some ways limited. One simply cannot take any [common noun] at all, place a definite article before it, and come up with a definite generic NP" (cf. also Heny 1972). Section 5.2 discusses the methodology and presents the results of a study into the frequencies of four types of noun phrases (definite singulars, definite plurals, indefinite singulars and bare plurals) in relation to hierarchically ordered taxonomic categories. We will examine whether the observation that the 'productivity' of the 'construction' in (1a) is limited is reflected in the results of this study.

Section 5.3 presents the results of a corpus study investigating whether the difference between animal names and nationality names has an influence on the frequencies of the four types of count noun phrases mentioned above. In the literature on genericity, little attention has been paid to lexical semantic classes. There are, however, speakers of Dutch dialects who judge sentences such as (2a),

in which a nationality name is used to be more acceptable than sentences like (2b), in which an animal name is used.[1]

(3)   a.   *De Oostenrijker is lichtvoetig   van aard.*
            'The Austrian   is light-hearted by nature.'
       b.   *De mol is blind.*
            'The mole is blind.'

In this perspective, it is interesting to examine what influence the lexical semantic class has on frequencies of different count noun phrase types. In the study presented in section 5.3, I will compare the frequencies of (Dutch) count noun phrase types with nationality names with data for animal names. These two classes appear relatively frequently in corpora. This increases the probability that significant conclusions can be drawn.

Section 5.4 is devoted to a study on the differences between three highly frequent common nouns: *mens* ('human being'/'man'), *man* ('man') and *vrouw* ('woman'). We will discuss the fact that *mens* can be seen as a so-called 'natural kind term', while *man* and *vrouw* are 'nominal kind terms'. This distinction becomes relevant in chapter 6.

Section 5.5 presents a questionnaire-based study of the judgements of speakers of 29 local (or regional) varieties of Dutch and Frisian about the acceptability of a number of characterizing and kind predicate sentences. In a pilot study, a number of speakers of Flemish dialects (i.e., dialects spoken in the Dutch-speaking part of Belgium) reported that characterizing sentences like those in (2), in which definite singulars are used in subject position, are unacceptable in their dialects (cf. Oosterhof 2004).[2] There are two positions that can be taken on this issue. First, it might be the case that the ill-formedness of sentences such as those in (2) is a purely syntactic peculiarity of certain (Flemish) dialects. A second possibility is that our observation about Flemish dialects is related to sensitivity to register. According to (a number of) speakers of Dutch, sentences such as (2) are more appropriate in formal language registers and in written Dutch than in informal registers and in spoken Dutch.[3] It is well-known (cf. for example Hoppenbrouwers 1990 and De Caluwe 2005) that there is usually a division of tasks between dialects and Standard Dutch: people who speak a dialect and Standard Dutch, use their dialect in informal contexts and situations rather than in formal ones. Possibly, the observation that speakers of dialects judge sentences such as (2) to be odd is related to the fact

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1. This claim is based on the judgements of speakers of the dialects of Eemnes, Ellewoutsdijk and Lapscheure.

2. This claim is based on 11 speakers of Flemish dialects.

3. This claim is based on the intuitions of four Flemish and one Netherlandic native speaker of Dutch, who agree with this claim.

that they belong to a register that is not normally associated with dialect. A decision (or compromise) between the hypotheses might be achieved by conducting systematic questionnaire research into the acceptability judgements of a (somewhat) larger number of informants. Although many of the informants do not speak the local dialect in its purest form, the results of the study show what and how much variation there is among local (or regional) varieties of Dutch (and Frisian).

5.2 Corpus study 1: Taxonomic hierarchies

5.2.1 Introduction

In the literature on genericity in English (see e.g., Carlson 1977: 275), it has been noted that the productivity of the "construction" exemplified in (1a), repeated in (3a), is in some ways limited. The definite singular in (3a) refers to the category of mammals, which is relatively high in a taxonomic hierarchy. Such sentences are less natural than (3b), (3c) and (3d)/(1b).

(3)   a. *?? Het zoogdier heeft tamelijk goede ogen.*
      b. *De zoogdieren hebben tamelijk goede ogen.*
         the mammals   have   rather   good eyes
         'Mammals have rather good eyes.'
      c. *Een zoogdier heeft tamelijk goede ogen.*
         'A   mammal has rather   good eyes.'
      d. *Zoogdieren hebben tamelijk goede ogen.*

An example of a taxonomic hierarchy is given in (4) (cf. Krifka et al. 1995: 76 for another example).

(4)
```
                          mammal …
          ┌─────────────────┼─────────────────┐
      marsupial          carnivore          primate …
     ┌────┴────┐         ┌───┴───┐         ┌────┴────┐
  dasyure   kangaroo…   bear   hyena…    ape      lemur…
     │         │        ╱╲       │        ╱╲         │
 Tasmanian  grey     polar brown       gorilla bonobo…
 devil …    kangaroo… bear  bear… …                      …   …
```
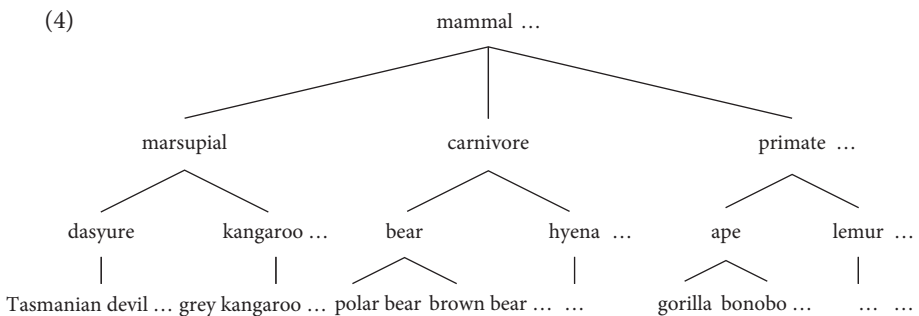
Sentences like (3a) illustrate the fact that definite singulars referring to kinds like the mammal (which are 'too general') are less natural than definite singulars referring to categories like the polar bear (as illustrated in previous chapters). This gives rise to the following hypothesis: when a common noun X refers to a category that is located higher in the hierarchy than the category corresponding to a noun Y, we expect that definite singulars are less frequently used with X than with Y. In the

next sections we will examine whether corpus research confirms this hypothesis (cf. also Oosterhof 2003). In section 5.2.2, I will describe the corpus and methodology used in this study. In 5.2.3, the results of the study will be presented. A summary of our findings is given in 5.2.4.

5.2.2   Corpus and selection of sentences

The corpus study presented here is a case study in which we examine the frequency of four noun phrase types under characterizing interpretations in relation to four hierarchically ordered taxonomic categories (polar bear, bear, carnivore and mammal). Dutch uses the common nouns in (5) to refer to these kinds.

(5)   *ijsbeer* ('polar bear')
       beer ('bear')
       (*land-*)*roofdier / carnivoor* ('carnivore')
       zoogdier ('mammal')

I created a corpus of texts about polar bears, bears, carnivores and mammals. Table 5.1 gives an overview of the corpus.

Table 5.1 Overview of the corpus

Source	Language (originally Dutch/ translated)	Period	Style	Number of publications/ websites	Number of words
Internet	Variable	(Often unknown)	Descriptive (sometimes slightly informal)	42	38 987
Lemmas from books, encyclopaedias and articles	Originally Dutch	1959–1975	Encyclopaedic	3	11 400
		1976–1990	Encyclopaedic	5	24 837
			Scientific	2	3 397
		1991–2003	Encyclopaedic	5	5 294
			In a non-specialist way	5	6 153
	Adapted from English	1976–1990	Encyclopaedic	2	3 104
		1991–2003	In a non-specialist way	2	15 168
Total				**66**	**1 08 340**

From this corpus, characterizing sentences in which one of the common nouns in (5) was used were selected. Kind predicate sentences were not included in this study.[4]

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4.   It would be interesting to compare data for characterizing sentences such as (6) with data for kind predicate sentences (such as (7)). The problem is, however, that (unambiguous) kind predicate sentences are so rare that it was impossible to draw statistically reliable conclusions about

In the presentation of the results, sentences such as (6a), in which a kind-referring noun phrase is used, are not distinguished from sentences like (6b).

(6) a. *De   ijsbeer   is gevaarlijk.*
         'The polar bear is dangerous.'
     b. *Een ijsbeer   is gevaarlijk*
         'A   polar bear is dangerous.'

Recall from chapter 3 that an indefinite singular like *een ijsbeer* in (6b) does not refer to a kind.

Sentences like (6a) are not treated separately from sentences like (6b) for the following reasons. First, recall that the acceptability of sentences like (7) is subject to inter-speaker variation (cf. chapters 3 and 4).

(7) %*IJsberen   worden met uitsterven bedreigd.*
       polar bears are   with extinction threatened
       'Polar bears are threatened with extinction.'

At the same time, (8) is acceptable beyond doubt.

(8) *IJsberen   zijn gevaarlijk.*
     'Polar bears are   dangerous.'

This suggests that the bare plural in (8) does not unambiguously get a kind reading, but that the sentence has a second reading in which the bare plural does not refer to a kind. So, we do not know for sure whether a noun phrase like *ijsberen* in (8) refers to a kind.

A second point is that the conclusions drawn on the basis of such observations are, to a certain degree, theoretically grounded. For example, one of the reasons why Cohen (1999) proposes that noun phrases like *ijsberen* in (8) unambiguously refer to a kind is that this is the most parsimonious conclusion. The weight of this argument depends on the theoretical orientation adopted. Theoretical conclusions can be drawn on the basis of corpus results and corpus results allow us to verify which theory makes the most accurate predictions about corpus data, but we want the data themselves to be as theory-neutral as possible. Therefore, sentences like (6a) are treated the same as sentences like (6b).

There are some syntactic and semantic factors that possibly have an effect on the form of the noun phrase in subject position. Firstly, the clause can be either a subordinate or a main clause. Moreover, the presence of frequency adverbs (e.g., *typically* or *normally*) or adjectives (*typical*, *average*) could make a difference. The corpus was too small to allow for reliable conclusions about the influence of these

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the relation between taxonomic hierarchies and the frequencies of noun phrase types in kind predicate sentences. For this reason, kind predicate sentences were not included in this study.

syntactic factors. Therefore, we only selected noun phrases in the subject position of full (characterizing) main clauses without frequency adverbs and without adjectives such as *typical* and *average*.

Furthermore, the presence of a temporal, locative or circumstantial adjunct possibly has consequences for the noun phrases in the subject position of characterizing sentences. An example sentence is given in (9).

(9)   (...)*in Alaska, wanneer de zalmen   de rivieren optrekken, schept de ijsbeer*
          in Alaska when   the salmons the rivers   go up   scoops the polar bear
      de vissen uit   het water op dezelfde wijze als de bruine beer pleegt te doen.[5]
      the fishes out of the water in the same way   as the brown bear tends to do.
      'In Alaska, when the salmon goes up the rivers, the polar bear scoops the fish
      out of the water in the same way as the brown bear tends to do.'

In this sentence, a property is assigned to the polar bears in Alaska, but not to polar bears in general. This could affect the form of the noun phrase. In order to avoid contamination of the data, sentences like (9) were left aside.

There are, however, other temporal, locative or circumstantial adjuncts that do not cause such problems. An example sentence is given in (10).

(10)   *Buiten de paartijd   leven de ijsberen   solitair.*[6]
       outside the mating season live   the polar bears solitary
       'Outside the mating season, polar bears live a solitary life.'

This sentence does assign a property to the whole category. It expresses that polar bears in general (and not only polar bears in Alaska) live solitary outside the mating season. We do not wish to exclude such sentences. So, it depends on the meaning of the adjunct whether a sentence should be included. We can formulate the following criterion: when the presence of an adjunct causes the property not to be assigned to objects of the category in general, then we do not include the sentence in our results.

Finally, sentences like (11) were left aside. Although (11) contains a predicate which describes a property that also applies to objects of the kind, the sentence differs from standard characterizing sentences in that it first of all places the kind and not its objects in the class of mammals. Since we cannot consider such sentences as belonging to the same category as standard characterizing sentences, these sentences were not included in the results.

(11)   *De   ijsbeer is een zoogdier.*
       'The polar is a   mammal.'

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5. The example originates from *De Reader's Digest Grote Geïllustreerde Dierenatlas.* 1986. Brussels: Reader's Digest. p. 26–27.

6. The example originates from Whitfield, Philip (ed.). 1984. *Encyclopedie van het dierenrijk. Alle gewervelde dieren in woord en beeld.* Areopagus. p. 82.

5.2.3   Results

In this section I present the findings of this study. The results are given in table 5.2 and are visualized in figure 5.1.

Table 5.2 The results of corpus study 1

| | | | | Type of noun phrase | | | |
| | | | | Singular | | Plural | |
Category	Source	Original language	N	Definite	Indefinite	Definite	Bare
ijsbeer	books	Dutch	43	12	3	6	22
('polar bear')		English	22	10	6		6
	internet		67	31	12	8	16
	total		132	53	21	14	44
beer	books	Dutch	27	1	1	6	19
('bear')		English	24	9	2		13
	internet		18		2		16
	total		69	10	5	6	48
roofdier	books	Dutch	13	2		2	9
('carnivore')		English					
	internet		12		1	2	9
	total		25	2	1	4	18
zoogdier	books	Dutch	6				6
('mammal')		English	18		1	3	14
	internet		5				5
	total		29		1	3	25
Total	books	Dutch	89	15	4	14	56
		English	64	19	9	3	33
	internet		102	31	15	10	46
	total		255	65	28	27	135
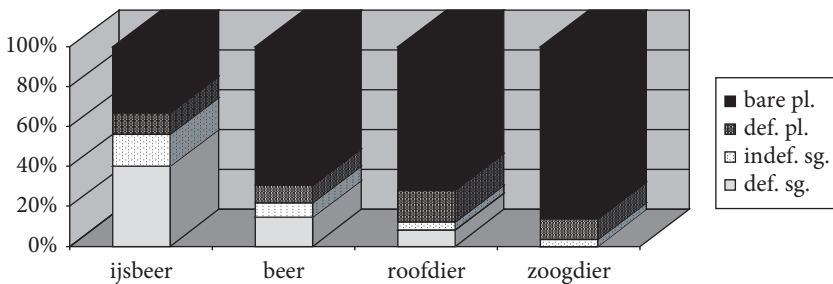
Figure 5.1 The distribution of noun phrase types in relation to hierarchically ordered categories.

Definite singulars become *less* frequent when the category is located higher in the taxonomic hierarchy. This result is presented in isolation in table 5.3. The correlation is statistically significant, using a Kendall tau-rank test (Kendall tau = −1, Z = −2.03810, p = 0.042).

Table 5.3 Correlation between the use of definite singulars and levels in the taxonomic hierarchy

↓common noun / type of noun phrase →	[+definite singular]	[–definite singular]
ijsbeer ('polar bear')	53	79
beer ('bear')	10	59
roofdier ('carnivore')	2	23
zoogdier ('mammal')	0	29

Table 5.3 shows that the corpus does contain some definite singulars that refer to categories located relatively high in the hierarchy. We found two sentences in which a definite singular referring to carnivores is used in the subject position of a characterizing sentence. One example sentence is given in (12).

(12)   *Het roofdier   vervult in de levensgemeenschap waarvan het deel uitmaakt,*
the carnivore plays   in the community   ofwhich it   part is,
een onontbeerlijke rol bij het bewaren   van het natuurlijk evenwicht.[7]
an indispensable role in the maintaining of   the natural   balance.
'The carnivore plays an indispensable role in maintaining the natural balance in the ecological community of which it is a part.'

Such sentences illustrate the fact that definite singular noun phrases are sometimes used to refer to categories that are relatively high in a taxonomic hierarchy.

Bare plurals exhibit an opposite behaviour when compared to definite singulars. In table 5.4 the results for bare plurals are contrasted with the results for other types of count noun phrases. Bare plurals become *more* frequent when the category is located higher in the taxonomic hierarchy.

Table 5.4 Correlation between the use of bare plurals and levels in the taxonomic hierarchy

↓common noun / type of noun phrase →	[+bare plural]	[–bare plural]
ijsbeer ('polar bear')	44	88
beer ('bear')	48	21
roofdier ('carnivore')	18	7
zoogdier ('mammal')	25	4

If the noun *zoogdier* is used, bare plurals are by far the most frequent noun phrases. A representative example of a characterizing sentence in which a bare plural refers to mammals can be found in (13).

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7.   This example originates from *Grote Spectrum Encyclopedie*. 1974. Utrecht/Antwerp: Het Spectrum. Volume 16. p. 168–169.

(13) *Zoogdieren   hebben een eigen temperatuurregeling,   zijn dus*
      mammals   have   an own temperature regulation system, are then
      warmbloedig.[8]
      warm-blooded
      'Mammals have their own temperature regulation system, hence are
      warm-blooded.'

The correlation between the frequency of bare plurals and the level in the taxonomic hierarchy is statistically significant: $\chi^2 = 44.6$, $p \leq 0.001$.

With respect to definite plurals and indefinite singulars, statistical tests do not lead to any further significant correlations between their corpus frequencies and taxonomic levels.

There is a significant difference between the results gleaned from the publications which were originally written in Dutch and those which were adapted from English: definite plurals are more frequently used in the former. This correlation, which is presented in table 5.5, is statistically significant. According to a Fisher's exact test, $p \leq 0.05$.

Table 5.5 Differences between definite plurals in originally Dutch and adapted texts

↓ original language / type of noun phrase →	[+definite plural]	[–definite plural]
originally Dutch	14	75
adapted from English	3	61

5.2.4   Summary and (some) discussion of the findings

The corpus study presented in the previous sections focused on the correlations between the positions of categories in a taxonomic hierarchy and the frequencies of four types of count noun phrases. We can draw the following conclusions:

- We have observed that definite singulars appear less frequently when the category is located higher in a taxonomy. This is in agreement with observations made in the literature (cf. for example Carlson 1977). Bare plurals, on the other hand, appear more frequently when we get a step up in the hierarchy. It is likely that the higher frequency of bare plurals is a result of the fact that definite singulars appear less frequently. An account of the latter fact will be presented in chapter 6.
- Characterizing sentences in which definite singulars are used that refer to categories which are located higher in the hierarchy than 'polar bear' or 'bear' are

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8.   This sentence originates from *Standaard Encyclopedie. Panorama in kleur.* 1972. Antwerp: Standaard. Volume 13. p. 422–424.

not totally impossible. We found two sentences in which a definite singular referring to carnivores is used in the subject position of a characterizing sentence. In chapter 6, a description of the semantics of definite singulars will be presented which can deal with this observation.

• There is a difference between results gleaned from publications originally written in Dutch and those which were adapted from English: definite plurals are more frequently used in the former. The relevance of this can be connected to an observation made, among others, by ter Meulen (1995) and Chierchia (1998). Ter Meulen (1995: 355–356) claims that in English definite plurals are not generally allowed in characterizing sentences like (14), in contrast to Dutch (cf. (15)). The fact that definite plurals are less frequently used in publications which were adapted from English than in publications originally written in Dutch indicates that the syntactic properties of the original language have a significant influence on the translator's choices. Second, it shows that Dutch definite plurals do have a kind reading, which is indeed not available for English definite plurals. In chapter 8, we will account for this contrast.

(14) #The elephants have valuable teeth.

(15) %*De olifanten   hebben waardevolle tanden.*
       the elephants have   valuable   teeth
       'Elephants have valuable teeth.'

5.3   Corpus study 2: Nationality and animal names in Flemish and Dutch material

5.3.1   Introduction

The following sections present the results of a corpus study that compared the distribution of two noun phrase types in characterizing sentences: noun phrases in which the common noun corresponds to an animal name and noun phrases in which the noun corresponds to a nationality name. These two classes were chosen because they are relatively frequent in corpora. It would be an interesting task for future research to include more classes (like brand names, object names, plant names, substance names). The first priority is to collect enough sentences to draw significant conclusions and not to investigate as many types as possible.

Kind predicate sentences were not included: (unambiguous) kind predicate sentences are so rare that it was impossible to draw statistically reliable conclusions about the relation between lexical semantic classes and the frequencies of noun phrase types in such sentences.

The corpus contains material from Dutch as well as from Flemish newspapers and Internet sites. In 5.5, we will present the results of a questionnaire study of the acceptability of a number of characterizing and kind predicate sentences in local (or regional) varieties of Dutch. The question is whether the frequencies of different noun phrase types in corpus material from Flanders and the Netherlands is influenced by the acceptability of the noun phrase types in the local (or regional) varieties spoken in Flanders and the Netherlands. This factor is included in this study (but not in any of the other corpus studies presented in this chapter), since the total number of corpus sentences selected in this study is large enough to draw conclusions about contrasts between Netherlandic and Belgian Dutch.

5.3.2 Corpus and selection of sentences

In this study, material from newspapers and web sites was used. The corpus consists of material from five resources:

– material obtained from *Mediargus*, a database of articles from Flemish newspapers;
– material selected from the Internet;
– the *INL 27 Miljoen Woorden Corpus 1995* (cf. note 4 in chapter 4);
– newspaper material from the *INL 38 Miljoen Woorden Corpus* (cf. chapter 4, note 4);
– the newspaper components of the *CONDIV*-corpus (cf. note 4 in chapter 4).

Table 5.6 gives an overview of the components selected from the five corpora:

Table 5.6 The corpus

Source words	Components	Number of words
Internet		n/a
Mediargus	*De Morgen* (1998, 1999, 2000, 2002), *Gazet van Antwerpen* (2005), *Het Nieuwsblad* (2003, 2004, 2005), *De Tijd* (2005), *De Standaard* (1998, 1999, 2002, 2004, 2005), *Het Belang van Limburg* (2005), *Het Volk* (2001)	n/a
INL 27 Miljoen Woorden Corpus 1995	*NRC Handelsblad* (1994, 1995)	27 million
INL 38 Miljoen Woorden Corpus	*Meppeler Courant* (1992–1995), *De Standaard* (1995)	11.7 million
Condiv-corpus	*NRC Handelsblad* (1998, 1999), *De Telegraaf* (1998, 1999), *De Limburger* (1998), *De Standaard* (1996), *Gazet van Antwerpen* (1998), *Het Laatste Nieuws* (1998), *Het Belang van Limburg* (1998)	17.6 million

The results presented in this section are based on 74 animal names and 26 nationality names. The relevant common nouns are listed in table 5.7.

Table 5.7 Overview of the animal names and nationality names

Animal names	*aalscholver – adder – bever – bloedzuiger – bonobo – bosuil – brilbeer – bronlibel – bruine kikker – bruine rat – buizerd – chimpansee – dagpauwoog – das – eekhoorn – egel – fuut – gentiaanblauwtje – gierzwaluw – gorilla – grauwe kiekendief – grote witte haai – grutto – haas – havik – hommel – huisspitsmuis – huiszwaluw – ijsbeer – kerkuil – kievit– knobbelzwaan – konijn – koolmees – kraanvogel – mol – muskusrat – nijlpaard – ooievaar – orang oetan – otter – potvis – ree – (reuzen)panda – ringslang – rode wouw – roek – roerdomp – roodborst – ruggenzwemmer – schaatsenrijder – slechtvalk – sneeuwpanter – snoek – snoekbaars – sperwer – spreeuw – staafwants – steenuil – stekelvarken – struisvogel – tijger – torenvalk – veldmuis – Vlaamse gaai – wasbeer – waterjuffer – watervleermuis – wilde eend – wolf – zeearend – zeehond – zeeotter – zwarte rat*
Nationality names	*Algerijn – Argentijn – Australiër – Belg – Braziliaan – Canadees – Chileen – Chinees – Colombiaan – Cubaan – Deen – Duitser – Ier – Indonesiër – Italiaan – Japanner – Nederlander – Nepalees – Nieuw-Zeelander – Noor – Portugees – Rus – Saudi – Senegalees – Spanjaard – Tunesiër*

There are some additional criteria: we only selected noun phrases in the subject position of full (characterizing) main clauses without adjectives such as *typical* and *average* and without frequency adverbs. The sentence must attribute a property to (all objects of) the kind. So, if a sentence contained a locative, temporal or circumstantial adjunct and as a result the property was not ascribed to objects of the kind in general, then we did not include the sentence in the results. Furthermore, sentences such as (11), repeated as (16), which describe the scientific taxonomic classification of animals were left aside.

(16)   *De ijsbeer is een zoogdier.*

Note that these criteria are similar to the criteria used in 5.2 (cf. section 5.2.2).

5.3.3   Results

The results of this study are presented in table 5.8. They are visualized in figures 5.2–5.5.

Table 5.8 The results of corpus study 2

			def. sg.		indef. sg.		def. pl.		bare pl.		Total
Animal names	The Netherlands	Newspapers	39	38%	8	8%	4	4%	52	50%	103
		Internet	50	41%	10	8%	6	5%	57	46%	123
		Total	**89**	**39%**	**18**	**8%**	**10**	**4%**	**109**	**48%**	**226**
	Belgium	Newspapers	32	31%	11	11%	4	4%	55	54%	102
		Internet	22	34%	10	15%	1	2%	32	49%	65
		Total	**54**	**32%**	**21**	**13%**	**5**	**3%**	**87**	**52%**	**167**
Nationality names	The Netherlands	Newspapers	13	14%	3	3%	20	22%	57	61%	93
		Internet	7	11%	1	2%	13	20%	45	68%	66
		Total	**20**	**13%**	**4**	**3%**	**33**	**21%**	**102**	**64%**	**159**
	Belgium	Newspapers	17	18%	8	8%	24	25%	46	48%	95
		Internet	8	19%	2	5%	11	26%	22	51%	43
		Total	**25**	**18%**	**10**	**7%**	**35**	**25%**	**68**	**49%**	**138**
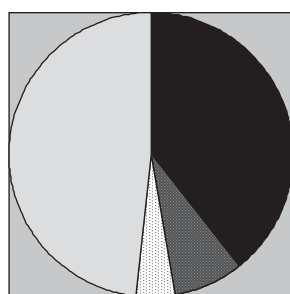
Figure 5.2 The Netherlands, animal names.
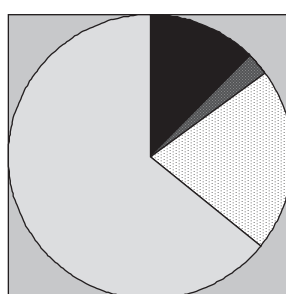
Figure 5.3 The Netherlands, nationality names.
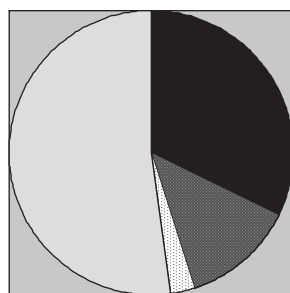
Figure 5.4 Belgium, animal names.
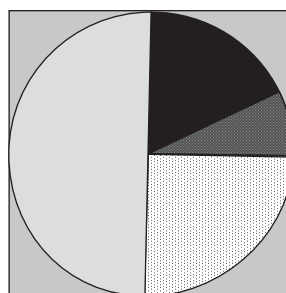
Figure 5.5 Belgium, nationality names.

Let us first note that there are no statistically significant differences between the frequencies of the four noun phrase types in newspapers and the frequencies in texts from the Internet. Therefore, no distinction is made between Internet and newspaper material in the figures 5.2–5.5.

In the following discussion, I refer to the sentences in (17) and (18). The example sentences in (17) illustrate the use of different types of noun phrases with animal names; the sentences in (18) contain nationality names.

(17) a. *De   aalscholver broedt in kolonies.*[9]
          'The cormorant breeds in colonies.'
      b. *Een veldmuis   heeft geen gemakkelijk leven.*
          a   field mouse has   no   easy   life
          'Life is not easy for a field mouse.'
      c. *Tijdens hun verblijf op vaste grond   teren de ijsberen   nagenoeg*
          during their stay   on solid ground live the polar bears almost
          volledig   op hun vetreserves.
          completely on their fat reserves
          'During their stay on land, polar bears live almost completely on their fat reserves.'
      d. *Aalscholvers   nestelen in kolonies.*
          'Cormorants nest   in colonies.'

(18) a. *De Nederlander is nogal gesloten (...).*[10]
          'The Dutchman   is rather reserved.'
      b. *Een Rus   staat   open voor Westerse invloeden.*
          a   Russian stands open for   Western influences
          'A Russian is open to Western influence.'
      c. *In de zomer   gaan de Noren   graag wandelen.*
          in the summer go   the Norwegians ADV   walk
          'In summer, (the) Norwegians like to have a walk.'
      d. *Chinezen houden niet van condooms.*
          Chinese like   not of   condoms
          'Chinese do not like condoms.'

The most important conclusion is that there are some significant differences between noun phrases with animal names (cf. figures 5.2 and 5.4) and noun phrases with nationality names (cf. figures 5.3 and 5.5). Definite singulars are used more

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9. These examples originate from http://users.pandora.be/franksawyer (December 2005), *Dagblad De Limburger*, 1998, *De Morgen*, January 1999 and http://www.ouwehand.nl (December 2005).

10. These sentences originate from *NRC Handelsblad*, March 1998, *NRC Handelsblad*, January 1999, http://www.noorwegen.org (December 2005) and *Het Belang van Limburg*, March 1998.

than twice as frequently with animal names (cf. (17a)) than with nationality names (cf. (18a)). This correlation is highly significant (χ^2 = 38.5, p ≤ 0.001). A similar result was found for indefinite singulars: they appear more than twice as frequently with animal names (cf. (17b)) than with nationality names (cf. (18b)). This correlation is significant (χ^2 = 6.5, p ≤ 0.025). A third result is that definite plurals are used *less* frequently when the common noun is an animal name (cf. (17c)) than when the noun is a nationality name (cf. (18c)). This correlation is highly significant as well (χ^2 = 52.1, p ≤ 0.001). No significant results were found for bare plurals.

Analysis of the data reveals two significant differences between Belgian and Dutch material. Firstly, indefinite singulars are used more frequently in Belgian texts than in Dutch publications (χ^2 = 4.75, p = 0.029) (cf. figures 5.2 and 5.3 *vs*. 5.4 and 5.5). This means that sentences like (17b) and (18b) appear more frequently in Belgian material than in Dutch material. A second statistically significant difference between Belgium and the Netherlands is that if the common noun is a nationality name, bare plurals are used less frequently in Belgian than in Dutch material (cf. figures 5.5 *vs*. 5.3). This means that sentences such as (18d) appear less frequently in Belgian material than in Dutch texts (χ^2 = 6.68, p = 0.010).

5.3.4   Summary and (some) discussion of the findings

In the previous sections, we have reported on some statistically significant results of a corpus study into the frequencies of different count noun phrase types with animal names and nationality names in Belgian and Dutch material. The study resulted in the following observations:

- Definite singulars and indefinite singulars are used more frequently with animal names than with nationality names. Definite plurals are used less frequently with animal names. These results show the relevance of differences between lexical semantic classes for the study of generics. Chapter 8 presents an account of differences in acceptability between sentences in which different lexical semantic classes are used. The results of the corpus study presented in this section illustrate that the relation between lexical semantic classes and the acceptability and frequency of characterizing sentences is a topic on which further research is needed.
- Indefinite singulars are used more frequently in Belgian texts than in Dutch material. In 5.5.3.1, this result will be related to the results of the questionnaire study.
- If the common noun is a nationality name, bare plurals are used less frequently in Belgian material than in Dutch material. In 5.5.3.1, this finding will be compared with the results of the questionnaire study.

5.4   Corpus study 3: *mens, man* and *vrouw*

5.4.1   Introduction

In this section, I present the results of a corpus study on the use of *mens* ('human/man'), *man* ('man') and *vrouw* ('woman') in example sentences such as (19), (20) and (21).

(19) a. *De man is het vleesgeworden sexuele instinct.*[11]
          the man is the incarnated   sexual   instinct
          'Men are the incarnation of sexual instinct.'

      b. *Een man mag   niet huilen, zingt het liedje (…).*
          a   man is allowed not   cry,   sings the song
          '"A man is not allowed to cry", says the song.'

      c. *De mannen zijn fysiek   sterker (…) dan de vrouwen.*
          the men   are physically stronger   than the women
          'Men are physically stronger than women.'

      d. *Mannen kunnen baby's krijgen.*
          men   can   babies get
          'Men can have children.'

(20) a. *De vrouw is in de islam gelijk aan haar mannelijke tegenpool.*[12]
          the woman is in the islam equal to   her   male   counterpart
          'The woman is equal to her male counterpart in Islam.'

      b. *Een vrouw is een sociaal wezen.*
          'A   woman is a   social creature.'

      c. *De vrouwen dienen zich onder andere   schaamtevol en*
          the women   should REFL among other things coy   and
          fatsoenlijk op   te stellen tegenover mannen.
          decent   PRT to pose   towards   men
          'Women should be coy and decent towards men.'

      d. *(…) vrouwen bezitten een oerkracht (…).*
              women   have   a   primal power
          'Women have primal power.'

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(21) a. *(…)de   mens is slecht.*[13]
         the man is bad
       'Man is bad.'

    b. *(…) een mens leeft niet op z'n eentje.*
         a   man lives not on his own
       'A man does not live on his own.'

    c. *De mensen zijn van nature haters van God.*
       the people are by   nature haters of   god
       'People are by nature haters of God.'

    d. *Mensen zijn Gods handlangers op aarde.*
       'People are God's accomplices on earth.'

In chapter 6, we will discuss the distinction between 'natural kind terms' and 'nominal kind terms' (cf. Cruse 1986: 140–143 and Krifka et al. 1995: 107–113). Cruse (1986: 140) describes the distinction between natural and nominal kinds as follows:

> "(…) [N]atural kind terms differ from nominal kind terms [in] that the latter correspond in a fairly precise way to analytic definitions containing a superordinate with a modifier. Thus, in general, the replacement of, say, *stallion* by *male horse* yields a logically equivalent sentence: *I saw a stallion* entails and is entailed by *I saw a male horse*. (…) Natural kind terms (…) are different (…). Consider the relation between *horse* and *animal*. (…) [T]here is no modification of *animal* which will yield an expression equivalent to *horse* in the way that *male horse* is equivalent to *stallion*. (...) [W]hile one can say that a mare and a stallion differ in respect of sex, there is no comparable way of expressing the difference between (…) a horse and a cow."

The nouns *man* and *vrouw* are quite similar to *stallion*. *Man* and *vrouw* correspond to analytic definitions containing a superordinate with a modifier. The replacement of *man* by *mannelijk mens* ('male human') yields a logically equivalent sentence: *Ik zag een man* ('I saw a man') entails and is entailed by *Ik zag een mannelijk mens* ('I saw a male human'). The same point can be made for *vrouw*. This suggests that *man* and *vrouw* are nominal kinds. On the other hand, *mens* can be treated on a par with *horse*. There is no modification of *dier* ('animal') which yields an expression equivalent to *mens* in the way that *male human* is equivalent to *man*. So, *mens* is a natural kind term. This distinction becomes relevant in chapter 6.

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13.   Sentences originate from *De Standaard*, December 1996, *Het Belang van Limburg*, March 1998, http://www.theologienet.nl/documenten/Watson_hartsterking.pdf (August 2006) and www.ncrv.nl (January 2006).

5.4.2   Corpus and selection of sentences

In this study, material from newspapers and websites was used. The corpus consists of material from four resources:

–   material selected from the Internet;
–   the *INL 27 Miljoen Woorden Corpus 1995* (cf. table 5.6 for the components and the number of words of this corpus);
–   the newspaper components of the *INL 38 Miljoen Woorden Corpus* (cf. table 5.6);
–   the newspaper components of the *CONDIV*-corpus (cf. table 5.6).

With respect to the selection of sentences from these corpora, the same criteria were used as in corpus studies 1 and 2 (cf. sections 5.2.2 and 5.3.2).

5.4.3   Results

The results are presented in table 5.9. The findings are visualized in figures 5.6, 5.7 and 5.8.

Table 5.9 The results of corpus study 3

	Definite singular		Indefinite singular		Definite plural		Bare plural		Total
man	8	11%	9	12%	1	1%	57	76%	75
vrouw	6	8%	7	9%	1	1%	63	82%	77
mens	67	37%	41	23%	2	1%	71	39%	181
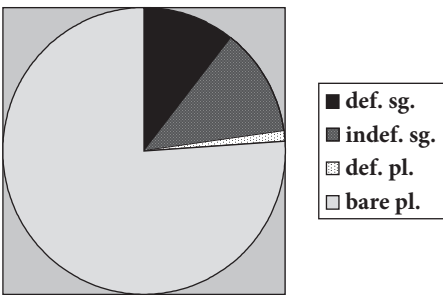
Figure 5.6 *man.*
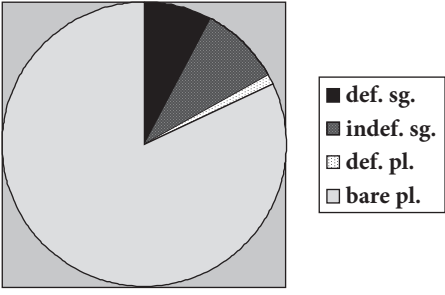
Figure 5.7 *vrouw.*

There are some significant contrasts between the data for *mens* and *vrouw/man*. With the noun *mens* definite singulars (cf. (21a)) are used more than three times
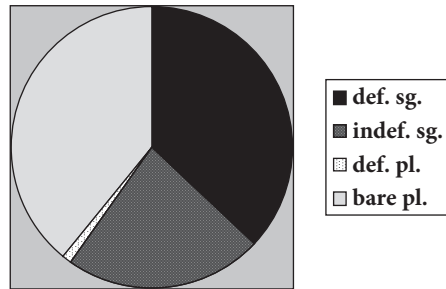
Figure 5.8 *mens.*

as frequently as with the nouns *man* (cf. (19a)) and *vrouw* (cf. (20a)). This correlation is significant (χ^2 = 125.9, p ≤ 0.001). A similar result is found for indefinite singulars: they appear more frequently with *mens* (cf. (21b)) than with *man* (cf. (19b)) and *vrouw* (cf. (20b)). This correlation is significant as well (χ^2 = 8.6, p ≤ 0.01).

Bare plurals are used *less* frequently with the common noun *mens* (cf. (21d)) than with the common nouns *man* (cf. (19d)) and *vrouw* (cf. (20d)). This correlation is highly significant (χ^2 = 53.3, p ≤ 0.001).

5.4.4 Summary of the findings

In the previous sections, we have reported some statistically significant results of a study into the frequencies of different count noun phrase types with the nouns *man*, *vrouw* and *mens*:

- There is a considerable difference between the nouns *man* and *vrouw* and the noun *mens*: bare plurals are used more frequently with *man* and *vrouw*, while definite and indefinite singulars appear more frequently with *mens*. The largest difference was found for definite singulars. In chapter 6, we will account for this result.

5.5 Questionnaire study: Genericity in local (or regional) varieties of Dutch and Frisian

5.5.1 Introduction

In a pilot study, a number of speakers of Flemish dialects reported that characterizing sentences such as the ones in (2), repeated as (22), in which definite singulars are used, are unacceptable in their dialects (cf. section 5.1).

(22)   a.   *De Oostenrijker is lichtvoetig van aard.*
      b.   *De mol is blind.*

Recall from section 5.1 that there are two positions that can be taken on this issue. First, it might be the case that the ill-formedness of sentences such as (22) is a purely syntactic peculiarity of certain dialects. A second possibility is that this observation is related to sensitivity to register. A decision (or compromise) between the hypotheses might be achieved by conducting systematic questionnaire research into the acceptability judgements of a (somewhat) larger number of informants. Although some of the informants do not speak the local dialect in its most authentic form,[14] the results of this study show how much and what type of variation there is among varieties of Dutch.

5.5.2   Methodology and selection of sentences

The questionnaire used in this study consists of 64 characterizing sentences and 18 kind predicate sentences. Table 5.10 presents a list of characterizing sentences used in this study (cf. table 5.11 for kind predicate sentences). I use Roman numbers to refer to test sentences. In the table, only test sentences with bare (plural or mass) nouns are given. There are, however, four variants of the sentences (I)–(XIV), in which count nouns are used: in each case, the a-sentence has a bare plural subject, the b-sentence has a definite singular subject, the c-sentence has an indefinite singular subject and the d-sentence has a definite plural subject. For the sake of illustration, sentences (Ia)–(Id) are given in (23).[15]

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14.   Dialects continue to disappear and "weaken" due to an increased urbanization, mobility and the impact of the standard variety in education and the media (cf. Hoppenbrouwers 1990; Hinskens 1993; Taeldeman 1993 and Kortmann 2002). There is a relation between social factors and dialect levelling. For example, older speakers speak a more 'authentic' dialect than younger speakers. So, a researcher who is primarily interested in dialectology must take into account parameters such as age, sex and class. Since our goal is to investigate the syntax and semantics of genericity and not to contribute to dialectological research, the influence of social factors is not taken into consideration.

15.   Note that the sentences are presented in a different order than in previous sections. The order of the sentences in (23) is the same as the order in which they were presented to our informants. Recall that in a number of dialects sentences such as (23b) are ill-formed. It could lead to confusion if the first sentence of the list is unacceptable under the intended reading. Therefore, I decided to present the sentences in the order given in (23).

Table 5.10 List of characterizing sentences used in the questionnaire study

Type of noun		Sentence
Count noun	Animal name (low in the taxonomic hierarchy)	**Ia.** Mollen zijn blind. ('Moles are blind.') **IIa.** Ooievaars hebben grote vleugels. ('Storks have large wings') **IIIa.** Spreeuwen vliegen erg snel. ('Starlings fly very fast.') **IVa.** Eekhoorns eten bessen, noten en zaden. ('Squirrels eat berries, nuts and seeds.')
	Animal name (higher in the taxonomic hierarchy)	**Va.** Vissen hebben goede ogen. ('Fish have good eyesight.') **VIa.** Roofvogels hebben sterke poten. ('Birds of prey have strong legs.') **VIIa.** Slangen eten vlees. ('Snakes eat meat.') **VIIIa.** Vogels leggen eieren. ('Birds lay eggs.')
	nationality name	**IXa.** Nederlanders zijn zuinig. ('Dutchmen are thrifty.') **Xa.** Belgen zijn erg beleefd. ('Belgians are very polite.') **XIa.** Duitsers praten erg luid. ('Germans talk very loudly') **XIIa.** Chinezen eten met twee stokjes. ('Chinese eat with two small sticks.')
	Object name	**XIIIa.** Wielen zijn rond. ('Wheels are round.') **XIVa.** Stofzuigers maken lawaai. ('Vacuum cleaners make noise.')
Mass noun		**XVa.** Goud is hard en zwaar. ('Gold is hard and heavy.') **XVIa.** Bier is gezond. ('Beer is healthy.') **XVIIa.** Hout drijft op water. ('Wood floats on water.') **XVIIIa.** IJzer trekt de bliksem aan. ('Iron attracts lightning.')

(23) a. *Mollen zijn blind.*   (= **Ia** in table 5.10)
         'Moles are blind.'

     b. *De   mol   is blind*   (= **Ib**)
         'The mole is blind.'

     c. *Een mol   is blind.*   (= **Ic**)
         'A   mole is blind.'

     d. *De mollen zijn blind.*   (= **Id**)
         the moles   are blind
         'Moles are blind.'

For sentences (XV)–(XVIII), in which mass nouns are used, there are only two variants. In each case, the a-sentence has a bare (singular) subject and the b-sentence has a definite (singular) subject. This is illustrated in (24), where sentences (XVa) and (XVb) are presented.[16]

(24) a. *Goud is hard en zwaar.*   (= **XVa** in table 5.10)
         'Gold is hard and heavy.'

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16.   In Standard Dutch, (24b) is ill-formed under a characterizing reading of the sentence (cf. chapter 7 for more discussion). However, test sentences are usually not preceded by grammaticality symbols, since (in many cases) they are subject to variation between varieties.

    b.   *Het goud is hard en   zwaar*   (= **XVb**)
        the gold is hard and heavy
        'Gold is hard and heavy.'

The sentences listed in table 5.10 contain different types of common nouns. We distinguish between count and mass nouns and, within the former group, between animal names, nationality names and object names. The animal names are divided into nouns like *mol* ('mole'), which refer to animal species and nouns like *vis* ('fish'), which refer to higher categories.[17] Recall from the results presented in section 5.3 that the use of different lexical semantic classes leads to differences between the frequencies of count noun phrases.[18] The study presented in section 5.2 has shown that there is a relation between levels in a taxonomic hierarchy and frequencies of count noun phrase types. It is interesting to verify whether similar distinctions lead to differences in acceptability between local varieties.[19]

In addition to the sentences in table 5.10, the questionnaire contains six sentences with the kind predicate *uitvinden* ('invent'). These sentences are presented in table 5.11 below. The reader might wonder why *uitvinden* is the only kind predicate included in the questionnaire. The problem is that Standard Dutch predicates like *uitsterven* ('die out'), *uitroeien* ('exterminate'), *voorkomen* ('occur'/'be found') do not have natural equivalents in most dialects of Dutch. If dialects speakers are confronted with these kind predicates, they resort to giving a paraphrase of the predicate's meaning (cf. (25) for some example sentences).

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17.   Ordinary language users do not necessarily perceive higher taxonomic categories as such. For example, there are many language users who do not know that there are different species of rhinos. It is, however, (relatively) common knowledge that *slang* is a generic name for cobras, pythons and other snakes and that *roofvogel* is a generic name for vultures, eagles, falcons and some other birds. The same point can be made for *vogel* and *vis*.

18.   Object names and mass nouns were not included in the study presented in 5.3. Recall that we noted there that it would be an interesting task for future research to include more classes of nouns in corpus investigations.

19.   Notice that half of the sentences contains an i(ndividual)-level predicate (i.e., I, II, V, VI, IX, X, XIII, XV and XVI) and the other half of the sentences contains a s(tage)-level predicate (i.e., III, IV, VII, VIII, XI, XII, XIV, XVII and XVIII). This distinction has played an important role in (formal) semantics since Carlson's (1977) dissertation. Chierchia (1995: 176) gives the following definition of the distinction: "I-level predicates express properties of individuals that are permanent or tendentially stable. S-level predicates, per contrast, attribute to individuals transient, episodic properties." I refer the reader to Chierchia (1995: 177) for a list of six properties that have been identified as criterial for "the characterization of i-level predicates". The fact that sentences with i-level as well as sentences with s-level predicates were included in the list yields a varied list of sentences. For completeness' sake, I should mention that I did not find significant differences between acceptability judgements of sentences with s-level predicates and judgements of sentences with i-level predicates.

(25) a. *Dinosauriërs zijn er   niet meer*
       dinosaurs   are there no more
       'Dinosaurs do not exist anymore.' (cf. Dinosaurs are extinct.)

 b. *De Nederlanders hebben alle dodo's doodgeschoten.*
       the Dutchmen   have   all dodos shot
       'The Dutch shot all dodos.' (cf. The Dutch exterminated the dodo.)

 c. *Een egel   dat zie je hier niet.*
       a   hedgehog that see you here not
       'Hedgehogs are not found here.'

This leads to heterogeneous responses. Furthermore, we cannot be sure that predicates like those in (25) are good examples of kind predicates. Therefore, only *uitvinden* was selected.

Table 5.11 List of sentences with *uitvinden* ('invent') used in the questionnaire study

Noun type	Position	Sentence
Count noun	Subject position	**XIXb.** De telefoon is uitgevonden door een Schot. ('Telephones were invented by a Scotsman')
	Object position	**XXb.** Die Schotse leraar heeft de telefoon uitgevonden. ('That Scottish teacher (has) invented the telephone.')
	Complement in a Prepositional Phrase	**XXIb.** Ik heb hier een foto van de uitvinder van de telefoon. ('Here, I have a picture of the inventor of the telephone')
Mass noun	Subject position	**XXIIb.** De koffie is uitgevonden door de Arabieren. ('Coffee was invented by the Arabs')
	Object position	**XXIIIb.** Die Duitse banketbakker heeft de marsepein uitgevonden. ('That German confectioner (has) invented marzipan')
	Complement in a Prepositional Phrase	**XXIVb.** Hij vertelde een verhaal over de uitvinder van de marsepein. ('He told a story about the inventor of marzipan.')

The list contains sentences in which count nouns (object names) and mass nouns (food names) occur in the direct object position of active sentences with *uitvinden*, in the subject position of passive sentences with *uitvinden,* or in postnominal PP-complements of the deverbal noun *uitvinder*.[20]

Again, there are four variants of sentences in which count noun phrases are used and two variants of sentences in which mass noun phrases are used (analogous to the sentences in (23) and (24)). Only the b-variants of the sentences are presented in table 5.11.

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20. The syntactic positions of subjects and direct objects will be further discussed in chapters 7 and 8.

The informants were requested to rate the acceptability of test sentences on a scale of 1 (completely unacceptable) to 5 (completely acceptable) (see also chapter 4).

The questionnaire was filled in by 29 speakers of local (or regional) varieties of Dutch and Frisian. I use the term *local/regional varieties* to emphasize that the varieties spoken by the informants are not necessarily representative of the authentic dialects of their villages or towns (cf. note 14). The names of the relevant cities, towns and villages, the provinces they are located in and their Kloeke code (a geographical code which represents a city, town or village) are given in table 5.12. I refer the reader to Oosterhof (2006a: 144) for a map of the Dutch language area. The locations where the relevant varieties are spoken are indicated on that map.

Table 5.12 List of cities/towns/villages, the provinces they are located in and Kloeke codes

Country	Province	Town/village	Number (in the tables)	Kloeke code
The Netherlands	Groningen	Uithuizen	1	C031
	Friesland	Holwerd	2	B009
	Drenthe	Norg	3	C176
	Overijssel	Genemuiden	4	F084
		Hellendoorn	5	G168
		Nijverdal	6	G169
	Gelderland	Oldebroek	7	F102
		Burculo	8	G252
		Scherpenzeel	9	F186
	Utrecht	Eemnes	10	E130/E162
	Noord-Holland	Blokker (Hoorn)	11	E058
	Zuid-Holland	Vlaardingen	12	K042a
		Rotterdam	13	K005
	Zeeland	Ellewoutsdijk	14	I111
	Noord-Brabant	Wouwse Plantage	15	K173
	Limburg	Montfort	16	L382
		Valkenburg	17	Q101
Belgium	Limburg	Val-Meer	18	Q178
		Gingelom	19	P175
	Vlaams-Brabant	Ternat	20	O166
		Wambeek	21	O161
	Antwerpen	Zandvliet	22	I119
	Oost-Vlaanderen	Nieuwkerken-Waas	23	I176
		Herdersem	24	O060
		Maldegem	25	I154
		Aalter	26	I187
	West-Vlaanderen	Klemskerke	27	H023
		Diksmuide	28	H108
		Adinkerke	29	H083

A last point that should be noted here is that because of the fact that we use only one informant per variety, the results should be interpreted with caution. There is probably considerable variation between speakers of one variety (or one dialect). The acceptability judgements offered by one speaker are not (necessarily) representative of a dialect.[21]

5.5.3   Results

The main results of the study will be presented in this section. A complete overview of the results is presented in the appendix to this chapter. Section 5.5.3.1 is devoted to the presentation of the results for the characterizing sentences with count noun phrases (i.e., sentences I–XIV). Section 5.5.3.2 presents the results for the characterizing sentences with mass noun phrases (i.e., sentences XV–XVIII). The results for the kind predicate sentences (i.e., sentences XIX–XXIV) are presented in section 5.5.3.3.

I will sometimes use the terminology in (26) to describe the results.

(26)   5 → fully acceptable   2 → relatively unacceptable
       4 → relatively acceptable   1 → completely unacceptable
       3 → intermediately acceptable

5.5.3.1   *Characterizing sentences with count noun phrases (sentences I–XIV)*
5.5.3.1.1   *Bare plurals*   Table 5.13 contains average acceptability judgements of characterizing sentences with bare plural subjects (sentences (Ia)–(XIVa)).

Table 5.13 Average acceptability scores for characterizing sentences with bare plurals

informant→ sentences ↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Ia–IVa (*mol*)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	4	5	5	5	5	5	5	5	5	5
Va–VIIIa (*vis*)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
IXa–XIIa (*Belg*)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5
XIII/XIVa (*wiel*)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Some examples of such sentences are given in (27).

(27)   a.   *Mollen zijn blind*   (= **Ia**)
            'Moles are blind.'
       b.   *Vissen hebben goede ogen.*   (= **Va**)
            Fish   have   good   eyes
            'Fish have good eyesight.'

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21.   The same holds for other studies, such as Van Craenenbroek (2004) and van Koppen (2005). Part of the dialect data in Van Craenenbroeck (2004: ii–iii and 8) and van Koppen (2005: ii and 7) (and in many other studies in the same tradition) are based on the intuitions of one speaker.

    c.   *Chinezen eten met twee stokjes.*   (= **XIIa**)
          Chinese   eat with two stick-DIM-PL
          'Chinese eat with two small sticks.'

    d.   *Wielen zijn rond.*   (= **XIIIa**)
          'Wheels are   round.'

The table shows that informants assign very high scores to characterizing sentences with bare plurals. Bare plurals are highly unmarked as subjects of characterizing sentences.

    Recall from 5.3.3 that if the common noun is a nationality name, bare plurals are used less frequently in Belgian than in Dutch material. Table 5.13 shows that the relevant sentences receive high scores in varieties spoken in the Netherlands (cf. informants 1–17) as well as in varieties spoken in Flanders (cf. informants 18–29). There is therefore no clear relation between the results presented in 5.3.3 and the (un)acceptability of the relevant sentences in local varieties of Dutch spoken in Flanders.

5.5.3.1.2 *Definite singulars.*   Table 5.14 contains average acceptability scores for sentences such as (28a), (28b) and (28c), in which definite singulars are used in subject position of characterizing sentences.

(28) a.   *De   mol   is blind.*   (= **Ib**)
          'The mole is blind.'

      b.   *De vis heeft goede ogen*   (= **Vb**)
          the fish has   good eyes
          'The fish has good eyesight.'

      c.   *De   Nederlander is zuinig.*   (= **IXb**)
          'The Dutchman   is thrifty.'

      d.   *Het wiel   is rond.*   (= **XIIIb**)
          'The wheel is round.'

Table 5.14 Average acceptability scores for characterizing sentences with definite singulars

informant→ sentences ↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Ib-IVb (e.g., *mol*)	1	5	1	1	3	1	1	4	2	1	3	3	5	1	1	2	2	1	2	2	3	1	1	1	1	4	3	1	1
Vb-VIIIb (e.g., *vis*)	1	4	1	1	3	1	1	1	2	1	2	2	3	1	1	2	2	1	2	1	2	1	1	1	1	2	3	1	1
IXb-XIIb (e.g., *Belg*)	2	4	1	2	3	1	1	5	2	3	5	4	3	2	1	2	3	1	2	3	4	2	1	1	1	5	3	2	1
XIII/XIVb (e.g., *wiel*)	1	1	1	1	3	2	1	2	2	1	1	2	1	2	1	2	2	1	2	2	2	1	1	1	1	2	2	1	1

Let us first consider the results for sentences Ib–IVb, in which nouns referring to animal species are used and sentences Vb–VIIIb, in which count nouns referring to higher categories like *vis* ('fish') are used. The top row of table 5.14 contains the average scores for sentences like *De mol is blind*; the second row corresponds to sentences like *De vis heeft goede ogen*. Recall that it has been observed that definite singulars cannot normally be used to refer to categories located relatively high in a taxonomy. This was illustrated in (1a), repeated as (29).

(29) *??Het zoogdier heeft tamelijk goede ogen.*

Table 5.14 shows that a number of informants judge sentences such as (28a) to be more acceptable than (28b). On average, scores assigned to sentences like (28a) are higher than scores assigned to sentences like (28b). This result is, however, not statistically significant (Mann-Whitney Test, $p = 0.063$).

Let us now compare the scores assigned to sentences like (28a), (28c) and (28d), in which common nouns belonging to different lexical semantic classes are used. Table 5.14 shows that a number of informants rate sentences like (28c), in which nationality names are used, as more acceptable than sentences like (28a), in which animal names are used. Furthermore, a number of informants rate sentences like (28a) to be more acceptable than sentences like (28d), in which object names are used. In figure 5.9, average values for sentences with different types of lexical semantic classes are presented.
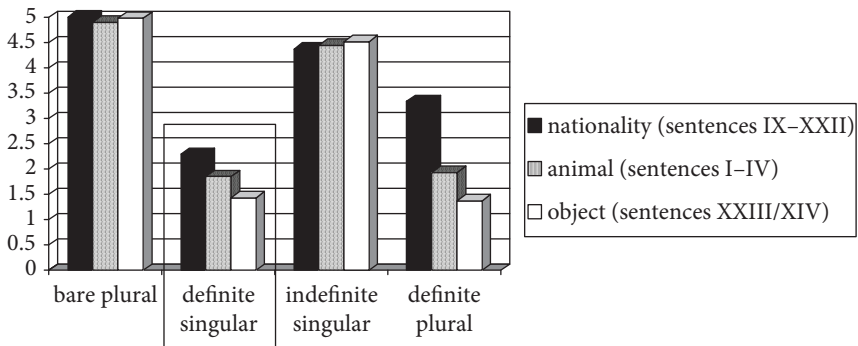

Figure 5.9 The influence of lexical semantic classes on acceptability judgements.

The box in the figure highlights the results for definite singulars. This figure illustrates that, on average, sentences like (28c) are more acceptable than sentences like (28a) and sentences like (28a) are more acceptable than sentences like (28d).[22]

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22. A similar results was found for definite plurals (cf. figure 5.10). We will return to this in section 6.5.3.1.4.

A Mann-Whitney Test shows that the difference between the average scores assigned to sentences like (28c) and (28a) is significant (p = 0.020). The difference between (28c) and (28d) is highly significant (p = 0.000).

In a number of varieties, there are sharp differences in acceptability with respect to the three types of nouns for which results are presented in figure 5.9 (i.e., nationality names, animal names and object names). Table 5.14 shows that a number of informants consider sentences like (28a) as well as sentences like (28c) (relatively) acceptable and sentences like (28d) (relatively) unacceptable.[23] A second possibility is that sentences like (28c) are (relatively) acceptable while sentences like (28a) and (28d) are (relatively) unacceptable.[24]

Furthermore, there are varieties in which (28a), (28c) and (28d) are all unacceptable[25] and there is one variety in which each of these sentences is relatively acceptable.[26]

5.5.3.1.3   *Indefinite singulars.*   Table 5.15 contains average acceptability judgements of characterizing sentences with indefinite singular subjects (sentences Ic–XIVc). Grey marked cells indicate full acceptability.

Table 5.15 Average scores for characterizing sentences with indefinite singulars

informant → sentences ↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Ic–IVc (e.g., *mol*)	4	5	5	5	5	3	4	5	4	3	5	4	5	5	5	5	4	5	4	5	5	5	4	5	5	5	5	2	4
Vc–VIIIc (e.g., *vis*)	4	5	5	5	5	3	4	5	4	3	5	4	5	5	5	5	4	5	4	5	5	5	4	5	5	5	5	2	4
IXc–XIIc (e.g., *Belg*)	4	5	5	5	5	5	4	5	4	3	5	4	5	4	5	5	4	5	4	5	5	5	4	5	5	5	5	2	3
XIII/XIVc (e.g., *wiel*)	4	5	5	5	5	3	4	5	4	3	5	5	5	5	5	5	5	5	4	5	5	5	4	5	5	5	5	2	5

23.   The relevant informants represent the varieties spoken in Holwerd (no. 2), Borculo (no. 8), Blokker (no. 11), Rotterdam (no. 13) and Aalter (no. 26).

24.   This is the case in the variety spoken in Eemnes (no. 10).

25.   This is the case in the varieties spoken in Uithuizen (no. 1), Norg (no. 3), Genemuiden (no. 4), Nijverdal (no. 6), Oldebroek (no. 7), Scherpenzeel (no. 9), Ellewoutsdijk (no. 14), Wouwse Plantage (no. 15), Montfort (no. 16), Val-Meer (no. 18), Gingelom (no. 19), Zandvliet (no. 22), Nieuwkerken-Waas (no. 23), Herdersem (no. 24), Maldegem (no. 25), Diksmuide (no. 28) and Adinkerke (no. 29).

26.   This is the case in the variety spoken in Hellendoorn (no. 5).

Some example sentences are given in (30).

(30)   a.   *Een mol   is blind*   (= **Ic**)
         'A   mole is blind.'
    b.   *Een vis heeft goede ogen*   (= **Vc**)
         a   fish has   good eyes
         'A fish has good eyesight.'
    c.   *Een Chinees   eet   met twee stokjes.*   (= **XIIc**)
         a   Chinese person eats with two stick-DIM-PL
         'A Chinese person eats with two small sticks.'
    d.   *Een wiel   is rond.*   (= **XIIIc**)
         'A   wheel is round.'

Table 5.15 shows that most informants find indefinite singulars (relatively) accept-able in the subject position of characterizing sentences. There is only one infor-mant, viz. the respondent from Diksmuide (no. 28), who finds each of the relevant sentences relatively unacceptable.

Recall that in section 5.3.3 we found that indefinite singulars appear more frequently in Belgian corpus material than in Dutch corpus material. Table 5.15 indicates that the relevant sentences are (relatively) acceptable in most varieties spoken in the Netherlands as well as in Belgium. There is no clear relation between the result presented in section 5.3.3 and the acceptability of indefinite singulars in dialects or varieties of Dutch spoken in Belgium.

5.5.3.1.4   *Definite plurals.*   Table 5.16 contains average acceptability scores for sentences such as those in (31), in which definite plurals are used in the subject position of characterizing sentences.

(31)   a.   *De mollen zijn blind*   (= **Id**)
         the moles are blind
         'The mole is/Moles are blind.'
    b.   *De vissen hebben goede ogen*   (= **Vd**)
         the fish   have   good eyes
         'Fish have good eyesight.'
    c.   *De Chinezen eten met twee stokjes.*   (= **XIId**)
         the Chinese eat   with two stick-DIM-PL
         'Chinese eat with two little sticks.'
    d.   *De wielen zijn rond.*   (= **XIIId**)
         the wheels are round.'
         'Wheels are round.'

Recall from section 5.5.3.1.2 (cf. figure 5.9) that there is a relation between lexical semantic classes and the acceptability of characterizing sentences with

Table 5.16 Average scores for characterizing sentences with definite plurals

informant → sentences ↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Id–IVd (e.g., *mol*)	1	1	1	2	3	1	2	3	2	1	3	3	1	2	1	2	2	1	3	2	3	2	1	4	1	2	5	1	1
Vd–VIIId (e.g., *vis*)	1	1	1	2	3	1	2	3	2	1	2	3	1	1	1	2	2	1	3	1	2	1	1	5	2	3	5	1	2
IXd–XIId (e.g., *Belg*)	1	5	1	3	3	3	4	5	3	1	5	4	5	3	5	4	2	5	4	1	5	3	4	5	5	5	5	1	1
XIII/XIVd (e.g., *wiel*)	1	1	1	1	3	1	1	3	2	1	1	2	1	2	1	2	2	1	3	1	2	1	1	1	1	2	1	1	1

definite singulars. A similar result is found for definite plurals. In figure 5.9, average scores for sentences with different types of lexical semantic classes were presented. This figure illustrates that, on average, sentences like (31c), in which nationality names are used, are more acceptable than sentences like (31a), in which animal names are used (Mann-Whitney Test, p = 0.000). It also shows that sentences like (31a) are more acceptable than sentences like (31d), in which object names are used (Mann-Whitney Test, p = 0.011).

In a number of varieties, there are sharp differences in acceptability with respect to the three types of common nouns. Table 5.16 shows that in a number of varieties only sentences like (31c) are (relatively) acceptable, while sentences like (31a) and (31d) are (relatively) unacceptable.[27] A second possibility is that sentences like (31c) as well as sentences like (31a) are (relatively) acceptable, while sentences like (31d) are (relatively) unacceptable.[28]

Furthermore, there are varieties in which (31a), (31c) and (31d) are all (relatively) unacceptable[29] and varieties in which each of the sentences is (relatively or intermediately) acceptable.[30]

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27.   This is the case in the varieties spoken in Holwerd (no. 2), Nijverdal (no. 7), Rotterdam (no. 13), Wouwse Plantage (no. 15), Montfort (no. 16), Val-Meer (no. 18), Nieuwkerken-Waas (no. 23), Maldegem (no. 25) and Aalter (no. 26).

28.   This is the case in the varieties spoken in Herdersem (no. 24) and Klemskerke (no. 27) and, to a lesser extent, Blokker (no. 11).

29.   This is the case in the varieties spoken in Uithuizen (no. 1), Norg (no. 3), Eemnes (no. 10), Valkenburg (no. 17), Ternat (no. 20), Diksmuide (no. 28) and Adinkerke (no. 29).

30.   This is the case in the varieties spoken in Hellendoorn (no. 5), Borculo (no. 8) and Gingelom (no. 19).

5.5.3.2. *Characterizing sentences with mass noun phrases (sentences XV–XVIII)*
This section presents the results for characterizing sentences such as (32) and (33), in which mass noun phrases are used.

Characterizing sentences such as (32), in which a bare mass noun phrase is used, are fully acceptable in all of the varieties under consideration.

(32)　*Bier　is gezond.*　　　　　　　　　　　　　　(= **XVIa**)
　　　'Beer is healthy'

Every informant assigns a score of 5 to each of the relevant sentences.

Table 5.17 presents average scores for characterizing sentences such as (33), in which a mass noun phrase with a definite article is used in subject position.

Table 5.17　Average scores for characterizing sentences with definite mass noun phrases

informant→																													
sentences ↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
XVb–XVIIIb	1	1	1	1	3	1	1	1	2	1	1	2	1	2	1	2	2	1	2	1	1	1	1	1	1	3	1	1	1

(33)　*Het bier　is gezond.*　　　　　　　　　　　(= **XVIa**)
　　　the beer　is healthy
　　　'Beer is healthy'

The table shows that in most varieties mass noun phrases with definite articles are scored as (relatively) unacceptable by the respective informants. Most informants assign scores of 1 or 2 to the relevant sentences.

5.5.3.3　*Kind predicate sentences (sentences XIX–XXIV)*
5.5.3.3.1　*Bare plurals.*　　In chapter 2, we observed that in Standard Dutch sentences such as (34b), in which a bare plural is used in direct object position of a kind predicate, are unacceptable.

(34)　a.　*Telefoons　zijn uitgevonden door een Schot.*　　(= **XIXa**)
　　　　　telephones are invented　　by　a　　Scotsman
　　　　　'The telephone was invented by a Scotsman.'
　　　b.　*Die Schotse leraar　heeft telefoons　uitgevonden.*　(= **XXa**)
　　　　　that Scottish teacher has　　telephones invented
　　　　　'That Scottish teacher invented the telephone.'
　　　c.　*Ik heb　hier een foto　　van de　uitvinder van telefoons.*　(= **XXIa**)
　　　　　I　have here a　picture of　the inventor of　telephones
　　　　　'I have a picture of the inventor of the telephone here.'

Table 5.18 contains acceptability scores for the sentences in (34) as provided by the informants of the questionnaire study.

Table 5.18 Results for kind predicate sentences with bare plurals

informant→ sentences↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
XIXa (= 34a)	5	3	1	1	4	1	4	3	2	3	1	2	4	2	1	1	2	3	4	3	3	1	2	5	3	5	3	1	4
XXa (= 34b)	5	1	1	1	4	1	1	1	1	3	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	3	2	1	1
XXIa (= 34c)	5	4	5	1	4	5	2	5	1	3	5	1	5	2	5	1	2	3	4	1	1	1	1	1	3	1	1	1	3

The table shows that in most varieties, bare plurals are problematic in direct object position, just like in Standard Dutch. The same picture arises from figure 5.10, in which the average scores for sentences XIX, XX and XXI are presented. The box highlights the results for bare plurals (sentences XIXa, XXa and XXIa).
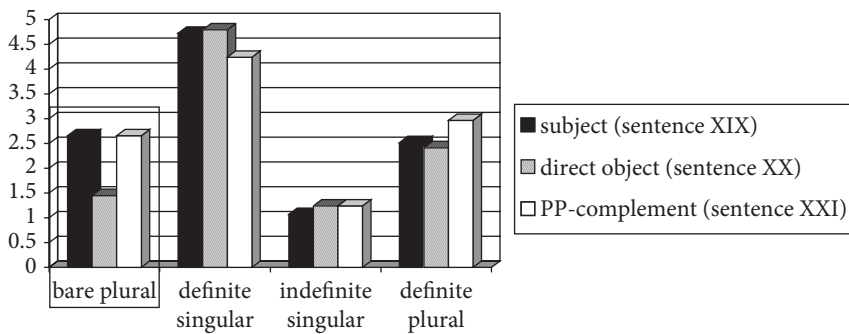
Figure 5.10 The influence of syntactic position on the acceptability of kind predicate sentences.

Things are, however, more complicated than may appear at first sight. On the basis of the scores for the sentences in (34) (cf. table 5.18), we can identify five groups of varieties. In the first group of varieties, each of the sentences in (34) is (relatively) unacceptable.[31] In the second group of varieties, each of the sentences is (relatively) acceptable.[32] There is a third group of varieties, in which only (34a) is acceptable.[33] In the fourth group, sentence (34a) as well as (34c) is (relatively) acceptable, but

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31.   This is the case for the varieties spoken in Genemuiden (no. 4), Scherpenzeel (no. 9), Vlaardingen (no. 12), Ellewoutsdijk (no. 14), Montfort (no. 16), Valkenburg (no. 17), Zandvliet (no. 22), Nieuwkerken-Waas (no. 23) and Diksmuide (no. 28).

32.   This is the case for the varieties spoken in Uithuizen (no. 1) and Hellendoorn (no. 5).

33.   This is the case for the varieties spoken in Oldebroek (no. 7), Herdersem (no. 24) and Aalter (no. 26).

(34b) is unacceptable.[34] In the last group, only sentence (34c) is acceptable.[35] This illustrates that there are considerable differences among varieties with regard to the syntactic positions in which bare plurals are (un)acceptable.

5.5.3.3.2   *Definite singulars.*   Recall from 5.5.3.1.2 (cf. table 5.14) that characterizing sentences such as (28d), repeated as (35), in which a definite article introduces a singular object name, are judged unacceptable or at best intermediately acceptable by every informant.

(35)   *Het wiel is rond.*   (= **XIIIb**)

Table 5.19 presents the scores for the sentences in (36), in which a definite article introduces a singular object name as well. Grey cells indicate full acceptability.

(36)   a.   *De telefoon   is uitgevonden door een Schot.*   (= **XIXb**)
             the telephone is invented   by   a   Scotsman
             'The telephone was invented by a Scotsman.'
       b.   *Die Schotse leraar   heeft de telefoon   uitgevonden.*   (= **XXb**)
             that Scottish teacher has   the telephone invented
             'That Scottish teacher invented the telephone.'
       c.   *Ik heb hier een foto   van de uitvinder van de telefoon.*   (= **XXIb**)
             i   have here a   picture of the inventor of   the telephone
             'I have a picture of the inventor of the telephone here.'

Table 5.19 Results for kind predicate sentences with definite singulars

informant→ sentences ↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
XIXb (= 36a)	1	5	5	5	5	5	3	5	5	5	5	5	5	5	5	5	4	5	4	5	5	5	5	5	5	5	5	5	5
XXb (= 36b)	1	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	5	5
XXIb (= 36c)	1	5	1	5	5	1	3	5	5	5	5	5	5	4	5	5	4	5	2	5	5	5	5	2	5	5	5	5	5

The table shows that most informants find *de telefoon* ('the telephone') acceptable in kind predicate sentences, even though all informants judge definite singulars like *het wiel* ('the wheel') unacceptable or at best intermediately acceptable in sentences like (35)).

_____

34.   This is the case for the varieties spoken in Rotterdam (no. 13) and Gingelom (no. 19).

35.   This is the case for the varieties spoken in Norg (no. 3), Nijverdal (no. 6), Blokker (no. 11) and Wouwse Plantage (no. 15).

Recall from 5.5.3.1.2 (table 5.14) that in a number of varieties definite singulars are not only unacceptable with object names (cf. (35)), but also in sentences like (28a) and (28c), repeated in (37), in which an animal name and a nationality name are used respectively.

(37) a. *De mol is blind.*   (= **Ib**)
    b. *De Nederlander is zuinig.*   (= **IXb**)

Table 5.14 shows that there are eight informants who assign a value of 1 to each of the relevant sentences.[36] Importantly, the same informants judge the sentences in (36), or at least some of the relevant sentences, acceptable or relatively acceptable. We conclude that in many cases definite singulars are unacceptable in characterizing sentences like (35) and (37), but they are acceptable in kind predicate sentences like (36).

5.5.3.3.3 *Indefinite singulars.* Table 5.20 contains acceptability scores for kind predicate sentences with indefinite singulars. The relevant sentences are presented in (38).

(38) a. *Een telefoon   is uitgevonden door een Schot.*   (= **XIXc**)
       a   telephone is invented   by   a   Scotsman
       'The telephone was invented by a Scotsman.'
    b. *Die Schotse leraar heeft een telefoon   uitgevonden.*   (= **XXc**)
       that Scottish teacher has a   telephone invented
       'That Scottish teacher invented the telephone.'
    c. *Ik heb hier een foto   van de uitvinder van een telefoon.* (= **XXIc**)
       I   have here a   picture of the inventor of a   telephone
       'I have a picture of the inventor of the telephone here.'

Table 5.20 Results for kind predicate sentences with indefinite singulars

informant→ sentences↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
XIXc (= 38a)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1
XXc (= 38b)	1	3	1	1	1	1	1	1	2	1	1	2	1	1	2	1	2	1	1	1	1	1	1	1	1	2	1	1	1
XXIc (= 38c)	1	1	1	1	1	1	1	1	2	1	1	2	1	1	1	1	2	1	3	2	1	1	1	2	1	1	1	1	1

36. These informants represent the varieties spoken in Norg (no. 3), Nijverdal (no. 6), Oldebroek (no. 7), Wouwse Plantage (no. 15), Val-Meer (no. 18), Nieuwkerken-Waas (no. 23), Maldegem (no. 25) and Adinkerke (no. 29).

The table shows that sentences such as (38) are judged (relatively) unacceptable by almost every informant. In chapter 3 we observed that in Standard Dutch indefinite singulars are unacceptable in kind predicate sentences. In this respect, varieties of Dutch are similar to Standard Dutch.

5.5.3.3.4 *Definite plurals.* Table 5.21 presents acceptability scores for kind predicate sentences with definite plurals. The relevant sentences are given in (39).

(39) a. *De telefoons zijn uitgevonden door een Schot.* (= **XIXd**)
the telephones are invented by a Scotsman
'The telephone was invented by a Scotsman.'

b. *Die Schotse leraar heeft de telefoons uitgevonden.* (= **XXd**)
that Scottish teacher has the telephone invented
'That Scottish teacher invented the telephone.'

c. *Ik heb hier een foto van de uitvinder van de telefoons.* (= **XXId**)
I have here a picture of the inventor of the telephones
'I have a picture of the inventor of the telephone here.'

Table 5.21 Results for kind predicate sentences with definite plurals

informant → sentences ↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
XIXd (= 39a)	1	4	1	3	4	1	5	1	1	1	1	4	4	4	5	1	2	2	3	4	2	1	3	4	3	2	3	1	2
XXd (= 39b)	1	3	1	3	3	1	5	1	2	1	1	4	1	4	2	1	2	1	3	1	4	1	3	5	4	5	3	1	3
XXId (= 39c)	1	5	1	3	3	1	5	5	3	1	5	4	1	5	5	1	1	1	4	4	4	3	2	5	4	2	5	1	1

The table shows that the acceptability of definite plurals in kind predicate sentences is subject to much variation. However, the results for these sentences do not systematically point to a pattern of variation.

5.5.3.3.5 *Mass noun phrases.* Table 5.22 presents the results for kind predicate sentences with mass noun phrases. The relevant sentences are given in (40), (41) and (42). A-sentences contain bare mass noun phrases; b-sentences contain mass noun phrases introduced by definite articles.

(40) a. *Koffie is uitgevonden door de Arabieren.* (= **XXIIa**)
coffee is invented by the Arabs
'Coffee was invented by the Arabs.'

b. *De koffie is uitgevonden door de Arabieren.* (= **XXIIb**)
the coffee is invented by the Arabs
'Coffee was invented by the Arabs.'

(41) a. *Die Duitse   banketbakker heeft marsepein uitgevonden.*   (= XXIIIa)
         that German confectioner has   marzipan invented
         'That German confectioner invented marzipan.'

   b. *Die Duitse   banketbakker heeft de marsepein uitgevonden.*   (= XXIIIb)
         that German confectioner has the marzipan invented
         'That German confectioner invented marzipan.'

(42) a. *Hij vertelde een verhaal over   de uitvinder van marsepein.*   (= XXIVa)
         he told   a   story   about the inventor of   marzipan
         'He told a story about the inventor of marzipan.'

   b. *Hij vertelde een verhaal over   de uitvinder van de marsepein.* (= XXIVb)
         he told   a   story   about the inventor of the marzipan
         'He told a story about the inventor of marzipan.'

Table 5.22 Results for kind predicate sentences with mass noun phrases

informant →

sentences ↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
XXIIa (= 40a)	5	5	5	3	5	5	2	5	5	5	3	5	3	5	2	5	1	5	5	5	1	5	5	3	5	5	5	3	5	3
XXIIb (= 40b)	1	5	1	5	5	1	5	3	2	5	5	5	5	5	1	5	2	5	3	5	5	5	5	4	4	1	5	1	5
XXIIIa (= 41a)	5	5	5	1	3	1	1	5	5	5	1	2	1	1	5	1	4	5	3	1	5	1	2	5	5	5	1	5	2
XXIIIb (= 41b)	1	5	1	5	5	5	5	2	3	3	5	5	5	5	1	5	2	5	3	5	5	5	5	5	3	5	5	1	5
XXIVa (= 42a)	5	5	5	3	4	5	3	5	5	3	5	1	5	3	5	1	5	5	5	2	5	1	2	5	5	5	1	5	4
XXIVb (= 42b)	1	5	1	5	5	1	5	5	3	5	1	5	5	5	1	5	1	5	3	5	5	5	5	3	4	4	5	1	5

Recall from 5.5.3.2 (table 5.17) that almost every informant considered characterizing sentences like (33), repeated as (43), to be unacceptable or at best intermediately acceptable.

(43)   *Het bier is gezond.*   (= XVIa)

Table 5.22 shows that there are a relatively large number of informants who consider mass noun phrases with definite articles acceptable in kind predicate sentences (cf. the results for XXIIb/40b, XXIIIb/41b and XXIVb/42b). These observations are reminiscent of what we saw in the previous section: in a number of cases, definite articles are acceptable in kind predicate sentences, but unacceptable in characterizing sentences.

Let us now compare the scores assigned to the a-sentences (with bare mass noun phrases) with the scores assigned to the b-sentences (with mass noun phrases introduced by definite articles). Table 5.22 shows that in many cases

only one of the two test sentences is acceptable. For example, the informant from Rotterdam (no. 13) judges a definite mass noun phrase to be fully acceptable in direct object position (cf. sentence XXIIIb), while in the same position, a bare mass noun phrase is completely unacceptable (cf. XXIIIa). Similar results are found for many other dialects.

From these results, the following picture emerges. There is a relation between the acceptability of (40a), (41a) and (42a) and the acceptability of (40b), (41b) and (42b) in that bare mass terms (cf. the a-sentences) and mass terms with definite articles (cf. the b-sentences) are competing forms. A plausible hypothesis is that structures with definite articles (cf. (40b), (41b) and (42b)) are acceptable *as a consequence of* the fact that the competing bare structures are problematic (cf. (40a), (41a) and (42a)).

In figure 5.11, average acceptability scores of sentences XXII, XXIII and XXIV are presented. Recall that in section 5.5.3.3.1 we observed that on average bare plurals are less acceptable in direct object position than in other positions. Figure 5.11 shows that the same point can be made for bare mass terms. Interestingly, the opposite situation holds for mass terms with a definite article (although this result is less pronounced and more research is necessary in order to verify this observation). This result confirms the hypothesis presented above: exactly in the position in which bare mass terms are relatively unacceptable, mass terms with definite articles are relatively acceptable.
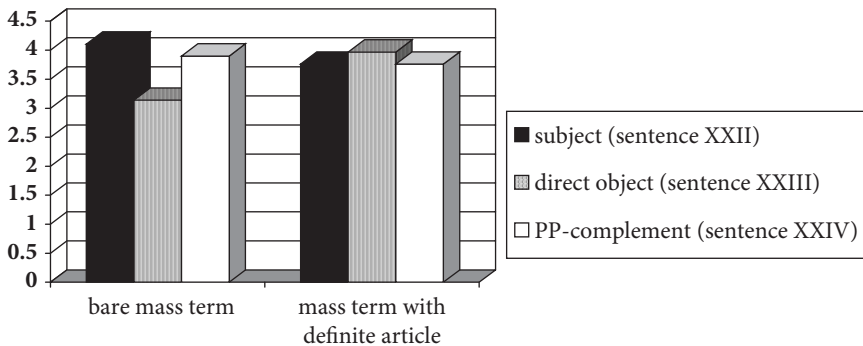
Figure 5.11 The influence of syntactic position on the acceptability of kind predicate sentences with mass terms.

A similar point can be made for definite singular count noun phrases (cf. table 5.19, section 5.5.3.3.2): they are relatively acceptable in argument positions of kind predicate sentences (in comparison to characterizing sentences) as a consequence of the fact that bare plurals are relatively unacceptable in such sentences (as was shown in 5.5.3.3.1, table 5.18).

These hypotheses will be further refined in chapter 8.

5.5.4   Summary and (some) discussion of the results

In the previous sections, we have presented the results of a questionnaire study into the acceptability of characterizing and kind predicate sentences in a number of local varieties of Dutch and Frisian. The following results were reported:

- The informants agree that bare plurals are (relatively) acceptable in characterizing sentences, but the acceptability of bare plurals in kind predicate sentences is subject to considerable variation among speakers of different varieties. Many dialect speakers consider some of the relevant kind predicate sentences unacceptable. In chapter 8, I will account for the patterns of acceptability judgements encountered in this chapter.
- In general, indefinite singulars are judged acceptable in characterizing sentences, but unacceptable in kind predicate sentences. This suggests that the varieties of Dutch investigated here are similar to Standard Dutch, in that kind-referential readings are not available for indefinite articles.
- The acceptability of definite singulars in characterizing sentences is influenced by differences between lexical semantic classes. In chapter 8, I will account for the patterns of acceptability judgements encountered in this chapter.
- The acceptability of characterizing sentences with definite singulars is subject to considerable variation among varieties and informants. There are informants from different parts of the Netherlands and Flanders who judge such sentences unacceptable. This phenomenon is not restricted to dialects spoken in a particular part of the language area. This is an illustration of the more general point that although there is considerable variation among speakers, most of the phenomena are not specific to particular parts of the language area. Probably, other dimensions are at least as relevant to the variation we found as the geographical dimension. Importantly, there are a number of speakers who do not judge definite singulars to be unacceptable in characterizing sentences. This is an indication that the unacceptability of definite singulars in a number of varieties cannot be explained purely by stylistic factors (such as sensitivity to register). Furthermore, it is not clear how the relation between lexical semantic classes and acceptability can be accounted for (solely) by stylistic factors. A more plausible hypothesis is that the ill-formedness of definite singulars is a syntactic peculiarity of certain varieties of Dutch, either spoken in Flanders or in the Netherlands.
- A number of informants who do not accept definite singulars in characterizing sentences, do rate them acceptable in kind predicate sentences. A similar, but stronger pattern emerges with mass noun phrases with definite articles: almost every informant judges them unacceptable in characterizing sentences, but in many varieties they are acceptable in kind predicate sentences.

Interestingly, there is a relation between the acceptability of bare mass terms in kind predicate sentences and the acceptability of mass terms with definite articles in kind predicate sentences: in many cases only of the two forms is acceptable. These observations give rise to the hypothesis that structures with definite articles are acceptable *as a result of* the fact that the competing bare structures are problematic (cf. chapter 8).

• Definite plurals are subject to considerable variation among speakers. The results for definite plurals in kind predicate sentences do not systematically point to a pattern of variation. The acceptability of definite plurals in characterizing sentences is influenced by differences between lexical semantic classes. On average, definite plurals are similar to definite singulars in that they are more acceptable with nationality names than with animal names and more acceptable with animal names than with object names. This will be discussed in more detail in chapter 8.

5.6   Concluding remarks

In this chapter, the results were presented of corpus studies into the frequencies of different types of count noun phrases in characterizing sentences and of questionnaire research into the acceptability of count and mass noun phrases in characterizing and kind predicate sentences.

The first corpus study showed that there are significant correlations between corpus frequencies and taxonomic hierarchies: higher taxonomic levels correspond to a lower frequency of definite singulars (and, correspondingly, to a higher frequency of bare plurals). This is in agreement with observations made in the literature (cf. Heny 1972 and Carlson 1977). The second corpus study showed that different lexical semantic classes lead to different frequencies of noun phrase types. Definite and indefinite singulars are used more frequently with animal names than with nationality names; definite plurals appear more frequently with nationality names. The third study revealed some significant differences between three highly frequent common nouns. Definite and indefinite singulars appear more frequently with *mens* ('human/man') than with *man* ('man') and *vrouw* ('woman'). The opposite result was found for bare plurals. In the following chapter, this difference between *mens* and *man/vrouw* will be related to the distinction between natural and nominal kinds.

The observation that lexical semantic classes are highly relevant to the study of generics was confirmed by the questionnaire results. According to a number of informants, definite plurals are more acceptable with nationality names than with animal names (and more acceptable with animal names than with object names).

This is in agreement with the fact that in corpora definite plurals are used more frequently with nationality names than with animal names. Another result from the questionnaire study is that according to a considerable number of informants definite mass noun phrases are more acceptable in kind predicate sentences than in characterizing sentences. A similar, but less strong result was found for definite singular counts. In chapter 8, we will explore the hypothesis that the (relative) acceptability of definite articles in kind predicate sentences is related to the fact that bare noun phrases are problematic in such sentences.

Appendix to chapter 5

Table. Complete overview of the results

	Characterizing sentences with count noun phrases																												
dialect→ sentence↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Ia	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	4	4	5	5	5	5	5	5	5	5	5
Ib	1	5	1	1	3	1	1	1	2	1	1	2	4	1	1	2	2	1	1	1	1	1	1	1	1	5	3	1	1
Ic	4	4	5	4	5	3	2	5	4	3	5	3	5	5	5	4	5	5	5	5	5	4	5	5	5	5	5	2	4
Id	1	1	1	1	3	1	1	3	2	1	1	2	1	1	1	2	2	1	2	3	3	1	1	3	1	2	5	1	1
IIa	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	2	5	5	4	5	5	5	5	5	5	5	5	5
IIb	1	5	1	1	3	1	1	5	2	1	5	4	5	1	1	2	2	1	2	2	3	1	1	1	1	5	3	1	1
IIc	4	5	5	5	5	3	5	5	4	3	5	4	5	5	5	5	4	5	4	5	5	5	4	5	5	5	5	2	4
IId	1	1	1	1	3	1	2	3	2	1	5	4	1	1	1	2	2	1	4	1	4	1	1	5	1	2	5	1	1
IIIa	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5
IIIb	1	5	1	1	3	1	1	4	2	1	1	3	5	1	1	2	2	1	2	1	3	1	1	1	1	3	3	1	1
IIIc	4	5	5	5	5	3	4	5	4	3	5	4	5	5	5	5	5	5	4	5	5	5	4	5	5	5	5	2	4
IIId	1	1	1	1	3	1	1	3	2	1	1	2	1	2	1	2	2	1	3	1	3	1	1	4	1	1	5	1	1
IVa	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	2	5	5	4	5	5	5	5	5	5	5	5	5
IVb	1	5	1	1	3	1	1	5	2	1	5	4	5	1	1	2	2	1	2	2	3	1	1	1	1	4	3	1	1
IVc	4	5	5	5	5	3	3	5	4	3	5	4	5	5	5	5	3	5	4	5	5	5	4	5	5	5	5	2	4
IVd	1	1	1	3	3	1	4	3	2	1	5	4	1	2	1	2	2	1	4	1	2	4	1	5	1	4	5	1	1
Va	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	5	5	5	5	5	5	5	5	5
Vb	1	4	1	1	3	1	1	1	2	1	1	2	4	1	1	2	2	1	1	2	1	1	1	1	1	3	3	1	1
Vc	4	5	5	5	5	3	4	5	4	3	5	4	5	5	5	5	4	5	5	5	5	5	4	5	5	5	5	2	5
Vd	1	1	1	1	3	1	1	3	1	1	1	2	1	1	1	2	2	1	2	1	3	1	1	5	1	3	5	1	2
VIa	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	4	5	5	5	5	5	5	5	5	5
VIb	1	4	1	1	3	1	1	1	2	1	5	2	1	1	1	2	2	1	2	1	3	1	1	1	1	3	3	1	1
VIc	4	5	5	5	5	3	4	5	4	3	5	5	5	5	5	5	4	5	4	5	5	5	4	5	5	5	5	2	4
VId	1	1	1	2	3	1	2	3	2	1	5	4	1	1	1	2	2	1	3	1	2	1	1	5	3	1	5	1	2
VIIa	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Table. Continued

sentence↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
VIIb	1	5	1	1	3	1	1	1	2	1	1	3	5	1	1	2	2	1	2	1	1	1	1	1	1	1	3	1	1
VIIc	4	5	5	5	5	3	2	5	4	3	5	4	5	5	5	5	5	5	4	5	5	5	4	5	5	5	5	2	4
VIId	1	1	1	1	3	1	1	2	2	1	1	3	1	1	1	2	2	1	2	1	1	1	1	3	1	2	5	1	1
VIIIa	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	5	5
VIIIb	1	1	1	1	3	1	1	1	2	1	1	2	3	1	1	2	2	1	2	1	1	1	1	1	1	2	2	1	1
VIIIc	4	5	5	5	5	3	5	5	4	3	5	4	5	5	5	5	3	5	4	5	5	5	4	5	5	5	5	2	3
VIIId	1	1	1	2	3	1	2	3	2	1	1	4	1	2	1	2	2	1	3	1	3	1	1	5	1	4	5	1	1
IXa	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
IXb	3	5	1	2	3	1	1	4	2	3	5	4	3	3	1	2	4	1	2	1	3	2	1	2	1	5	3	1	1
IXc	4	5	5	4	5	3	4	5	4	3	5	3	4	4	5	5	4	5	4	4	5	5	4	5	5	5	5	1	3
IXd	1	5	1	3	3	1	2	4	3	1	5	4	5	2	5	5	2	5	2	1	4	4	4	5	5	5	5	1	1
Xa	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5
Xb	1	5	1	2	3	1	1	5	2	3	5	4	5	2	1	2	2	1	2	4	4	2	1	1	1	5	3	3	1
Xc	4	5	5	4	5	5	3	5	4	3	5	3	5	4	5	5	4	5	4	5	5	5	4	5	5	5	5	1	3
Xd	1	5	1	3	3	3	4	4	3	1	5	4	5	3	5	2	2	5	4	1	5	2	4	5	5	5	5	2	1
XIa	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5
XIb	1	4	1	1	3	1	1	5	2	3	5	4	2	1	1	2	2	1	2	4	3	2	1	1	1	5	3	1	1
XIc	4	4	5	5	5	5	4	5	4	3	5	4	5	3	5	5	4	5	4	5	5	5	4	5	5	5	5	2	3
XId	1	5	1	1	3	3	3	5	3	1	5	4	4	3	5	2	2	5	4	1	4	3	4	5	5	5	5	1	1
XIIa	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5
XIIb	1	3	1	1	3	1	1	5	2	3	5	4	2	2	1	2	2	1	2	1	4	1	1	1	1	3	3	1	1
XIIc	4	5	5	5	5	5	5	5	4	3	5	4	5	4	5	5	4	5	4	5	5	5	4	5	5	5	5	2	3
XIId	1	5	1	3	3	3	5	5	3	1	5	4	5	4	5	5	2	5	4	1	5	1	4	5	5	5	5	1	1
XIIIa	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
XIIIb	1	1	1	1	3	3	1	1	2	1	1	2	1	2	1	2	2	1	3	2	2	1	1	1	1	3	3	1	1
XIIIc	4	5	5	5	5	3	4	5	4	3	5	5	5	5	5	5	5	5	4	5	5	5	4	5	5	4	5	2	5
XIIId	1	1	1	1	3	1	1	3	2	1	1	2	1	2	1	2	2	1	3	1	1	1	1	1	1	2	1	1	1
XIVa	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5
XIVb	1	1	1	1	3	1	1	2	2	1	1	2	1	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1
XIVc	4	5	5	5	5	3	4	5	4	3	5	4	5	5	5	5	4	5	4	5	5	5	4	5	5	5	5	2	4
XIVd	1	1	1	1	3	1	1	3	2	1	1	2	1	1	1	2	2	1	2	1	2	1	1	1	1	1	1	1	1

Characterizing sentences with mass noun phrases

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
XVa	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
XVb	1	1	1	1	3	1	1	1	2	1	1	2	1	1	1	2	2	1	2	1	2	1	1	1	1	1	1	1	1
XVIa	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
XVIb	1	1	1	1	3	1	1	2	2	1	1	2	1	1	1	2	2	1	3	1	1	1	1	1	1	4	1	1	1
XVIIa	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
XVIIb	1	1	1	1	3	1	1	1	2	1	1	2	1	3	1	2	2	1	2	1	1	1	1	1	1	3	1	1	1
XVIIIa	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
XVIIIb	1	1	1	1	3	1	2	1	2	1	1	2	1	2	1	2	2	1	2	1	1	1	1	1	1	4	1	1	1

Table. Continued

	Kind predicate sentences																												
dialect→																													
sentence↓	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
XIXa	5	3	1	1	4	1	4	3	2	3	1	2	4	2	1	1	2	3	4	3	3	1	2	5	3	5	3	1	4
XIXb	1	5	5	5	5	5	3	5	5	5	5	5	5	5	5	5	4	5	4	5	5	5	5	5	5	5	5	5	5
XIXc	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1
XIXd	1	4	1	3	4	1	5	1	1	1	1	4	4	4	5	1	2	2	3	4	2	1	3	4	3	2	3	1	2
XXa	5	1	1	1	4	1	1	1	1	3	1	1	1	1	1	1	2	1	1	1	1	1	1	1	3	2	1	1	1
XXb	1	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	5	5
XXc	1	3	1	1	1	1	1	1	2	1	1	2	1	1	2	1	2	1	1	1	1	1	1	1	2	1	1	1	1
XXd	1	3	1	3	3	1	5	1	2	1	1	4	1	4	2	1	2	1	3	1	4	1	3	5	4	5	3	1	3
XXIa	5	4	5	1	4	5	2	5	1	3	5	1	5	2	5	1	2	3	4	1	1	1	1	1	3	1	1	1	3
XXIb	1	5	1	5	5	1	3	5	5	5	5	5	5	4	5	5	4	5	2	5	5	5	5	2	5	5	5	5	5
XXIc	1	1	1	1	1	1	1	1	2	1	1	2	1	1	1	1	2	1	3	2	1	1	1	2	1	1	1	1	1
XXId	1	5	1	3	3	1	5	5	3	1	5	4	1	5	5	1	1	1	4	4	4	3	2	5	4	2	5	1	1
XXIIa	5	5	5	3	5	5	2	5	5	3	5	3	5	2	5	1	5	5	5	1	5	5	3	5	5	5	3	5	3
XXIIb	1	5	1	5	5	1	5	3	2	5	5	5	5	5	1	5	2	5	3	5	5	5	5	4	4	1	5	1	5
XXIIIa	5	5	5	1	3	1	1	5	5	5	1	2	1	1	5	1	4	5	3	1	5	1	2	5	5	5	1	5	2
XXIIIb	1	5	1	5	5	5	5	2	3	3	5	5	5	5	1	5	2	5	3	5	5	5	5	5	3	5	5	1	5
XXIVa	5	5	5	3	4	5	3	5	5	3	5	1	5	3	5	1	5	5	5	2	5	1	2	5	5	5	1	5	4
XXIVb	1	5	1	5	5	1	5	5	3	5	1	5	5	5	1	5	1	5	3	5	5	5	5	3	4	4	5	1	5

Issues in the syntax–semantics interface

The semantics of bare arguments

6.1   Introduction

In section 2.3.2.3, we observed that bare plurals and bare mass terms used in direct object position do not receive kind readings, as illustrated in (1a).

(1)   a. *#Edison heeft gloeilampen uitgevonden.*
          Edison has   light bulbs   invented
      b. *Edison heeft de gloeilamp uitgevonden.*
          Edison has   the light bulb invented
          'Edison invented the light bulb.'

This is problematic from the perspective of analyses such as Chierchia's (1998) and Cohen's (1999, 2002), who make the assumption that bare arguments unambiguously refer to kinds. Cohen (2002: section 5.1) writes: "bare plurals uniformly refer to kinds, in characterizing generics as well as in cases of direct kind predication."

   Cohen's statement implies that bare plurals do not only refer to kinds in sentences like (2a), in which a kind predicate is used (i.e., in cases of direct kind predication), but also in characterizing sentences like (2b) without a kind predicate.

(2)   a. *%IJsberen   worden met uitsterven bedreigd.*
          polar bears are   with extinction threatened
          'Polar bears are threatened with extinction.'
      b. *IJsberen   leiden een zwervend bestaan.*
          'Polar bears lead   a   roving   life.'

Crucially, Cohen (1999, 2002) argues that the kind-referential reading of (2b) is the only interpretation of this sentence. In Cohen's (1999) framework, (2b) is represented as in (3).

(3)   GEN[x] [C(↑**ijsbeer**)(x)] [**een-zwervend-bestaan-leiden**(x)]
      'In most cases in which x is an object of the kind corresponding to
      ijsbeer, x leads a roving life.'

The relation C makes it possible to attribute object-level properties such as *een zwervend bestaan leiden* to kinds. I refer the reader to chapter 3 for details of this technique.

Cohen's assumption that *ijsberen* unambiguously refers to a kind in sentences like (2b) leads to the question of whether or not *ijsberen* unambiguously refers to a kind in (4) as well. A possible representation of (4) is given in (5). The assumption of the relation C allows us to represent *ijsberen* in (4) as a kind-referential noun phrase.

(4) *Er   zijn ijsberen   aan het spelen (in hun kooi).*
     'There are polar bears playing   (in their cage).'

(5) ∃x [C(↑**ijsbeer**)(x) & **spelen**(x)]
     'There are objects of the kind corresponding to *ijsbeer* which are playing.'

Under Cohen's analysis, the most economical hypothesis is that *ijsberen* unambiguously refers to a kind in (4), just as in (2b).

In this study, we will not have to deal with the question whether *ijsberen* unambiguously refers to a kind in (4), because in this chapter we will argue that bare plurals do not unambiguously refer to kinds in characterizing sentences like (2b) (cf. also section 3.4). I assume that bare plurals can receive a second reading in which they introduce a variable without referring to a kind. The alternative interpretation of (2b) is represented in (6).

(6) GEN[x] [**ijsbeer**(x)] [**een-zwervend-bestaan-leiden**(x)]
     'In most cases in which x is a polar bear, x leads a roving life.'

My position can be considered as a variant of the 'Ambiguity Approach' (Chierchia 1998: 341) and is similar to that of Longobardi (2001), who claims that English bare plurals are ambiguous between a kind reading and a reading in which they introduce a variable.

This does not mean that bare plurals should be ambiguous in every sentence in which they are used. I assume that in sentences like (2a) bare plurals unambiguously refer to kinds: variable-introducing representations are ruled out, because individual instances are not the sort of things that can be extinct (cf. Cohen 1999: 43 for a similar assumption).[1]

This chapter will argue in favour of the claim that bare plurals are ambiguous. The arguments that will be put forward suggest that the distribution and behaviour

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1.   Note that this presentation is somewhat simplified. Sentences like (i) below also receive a 'taxonomic' reading, in which they ascribe a property to (some) kinds of bears. In chapter 3 we assumed that the bare plural in (i) introduces a variable and provides a restriction to it through a predicate of being a *kind of* bear, i.e., the bare plural receives a variable-introducing interpretation.

(i)   *Er   worden beren met uitsterven bedreigd.*
      there are   bears with extinction threatened.
      'Some bear species are threatened with extinction.'

of bare plurals differ from those of definite singulars in that definite singulars in characterizing sentences like (7) do unambiguously refer to a kind (as represented in (3)).

(7)   *De   ijsbeer   leidt   een zwervend bestaan.*
       'The polar bear leads a   roving   life.'

Definite singulars can receive definite/specific interpretations as well. Sentences like (7) can receive an episodic interpretation. Under this reading, the definite singular *de ijsbeer* refers to a contextually determined individual instance.[2] My claim is, however, that when (7) is interpreted as a characterizing sentence, *de ijsbeer* unambiguously refers to a kind, while bare plurals are ambiguous when they are used in characterizing sentences.

In the literature, bare mass terms and bare plurals are usually treated on a par. Carlson (2006: 48, note 48), for example, writes: "As usual, the term 'bare plural' also includes mass terms." In this chapter we will discuss the question whether bare mass terms are semantically similar to bare plurals. According to a percentage of speakers of Dutch, bare mass terms can receive kind readings. Relevant example sentences are presented in (8) and (9a).

(8) *%#Bamboe is met   uitsterven bedreigd.*
        bamboo is with extinction threatened
        'Bamboo is threatened with extinction.'

In (9b), the same bare mass noun as in (9a) is used in a characterizing sentence. Cohen (1999: 46–47) makes use of the relation C to represent (9b) (cf. (10)).

(9)   a. *%#Pruimtabak   is met uitsterven bedreigd.*
              chewing tobacco is with extinction threatened
              'Chewing tobacco is threatened with extinction.'
        b.   *Pruimtabak   bevat   giftige   stoffen*
              'Chewing tobacco contains poisonous substances.'

Cohen assumes that in cases like (9b) each 'chunk' of a substance would be considered an instance of the relevant kind: "That is to say, the *chunk* coordinate would

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2.   The definite/specific interpretation of *de ijsbeer* ('the polar bear') can be represented by using the iota-operator. This operator reads as 'the unique …'. So, *de ijsbeer* can be represented as ιx[**ijsbeer**(x)], which can be paraphrased as 'the unique x such that x is a polar bear'. In the episodic reading of (7), the property of leading a roving life (i.e., **een-zwervend-bestaan-leiden**), is predicated of this unique object. This is represented in (i).

(i)   **een-zwervend-bestaan-leiden**(ιx(**ijsbeer**(x)))
        'The unique x such that x is a polar bear leads a roving life.'

map the kind (…) into a set whose members are chunks of snow [or in our case chewing tobacco]." So, sentence (9b) can be represented as in (10).[3]

(10)   GEN[x] [C(↑**pruimtabak**)(x)] ∃y[**giftige-stoffen**(y) & **bevatten**(x, y)]
          'In most cases in which x is a chunk of the kind corresponding to *pruimtabak*,
          x contains poisonous substances.'

A logical question to ask is whether bare mass terms *unambiguously* refer to kinds. Chierchia (1998: 340–341), answers this question affirmatively: "I would like to assess the status of the ongoing debate on bare nominal arguments (bare plurals and mass nouns) in English; (…) I will argue in favour of going back to (…) a (…) view, where bare arguments unambiguously refer to kinds." However, if we assume that bare plurals are ambiguous between the reading in (3) and (6), it is plausible to make the assumption that bare mass terms are ambiguous as well. The alternative interpretation of sentence (9b) is represented in (11) (cf. Krifka et al. 1995: 42 for similar semantic representations of bare mass terms).

(11)   GEN[x] [**pruimtabak**(x)] ∃y[**giftige-stoffen**(y) & **bevatten**(x, y)]
          'In most cases in which x is chewing tobacco, x contains poisonous substances.'

The conclusion of this chapter will be that sentences such as (9b) are indeed ambiguous between the interpretations represented in (10) and (11).

The chapter is organized as follows. Section 6.2 discusses the semantics of bare plurals and presents arguments in favour of the view that bare plurals are ambiguous between the two readings described above. Section 6.3 is devoted to a discussion of the semantics of bare mass terms. Although I will show that the arguments provided in 6.2 in favour of the claim that bare plurals are ambiguous cannot be easily applied to bare mass arguments, our conclusion will be that bare mass terms are ambiguous, just like bare plurals. The chapter is concluded in 6.4.

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3.   Notice that a sentence like (i) does not attribute a property to chunks of water, but to molecules of water. This can be accounted for by assuming that in this case C corresponds to a *molecule coordinate*. Thus, we can represent (i) as in (ii) (without analysing *uit drie atomen bestaan* in detail).

(i)   *Water bestaat uit drie   atomen.*
          'Water consists of three atoms.'

(ii)   GEN[x] [C(↑**water**)(x)] [**bestaan-uit-drie-atomen** (x)]
          'In most cases in which x is a molecule of the kind corresponding to
          water, x consists of three atoms.'

6.2   Bare plurals

6.2.1   Introduction

This section presents arguments in favour of the claim that bare plurals are ambiguous between the readings represented in (3) and (6). In 6.2.2, we will discuss the fact that there is inter-speaker variation with respect to the acceptability of sentences such as (2a), whereas sentences such as (2b) are acceptable beyond doubt. Section 6.2.3 is devoted to the observation that in direct object position and in postnominal PPs bare plurals are unacceptable under the kind reading. Section 6.2.4 shows that bare plurals can occur in characterizing sentences even when a common noun is used that does not correspond to a kind. Section 6.2.5 discusses the representative object interpretation (cf. chapter 3) and addresses the question whether bare plurals can get this interpretation. Our conclusions are presented in 6.2.6.

6.2.2   Inter-speaker variation

Let us suppose that a language exists in which sentences like (2a), repeated below as (12a), are ill-formed. No one will assume that in such a language bare plurals refer to kinds in sentences like (2b), repeated as (12b).

(12)   a. *% IJsberen worden met uitsterven bedreigd.*
         b.   *IJsberen leiden een zwervend bestaan.*

For a number of speakers of Dutch, sentences like (12a) are in fact unacceptable, while (12b) is acceptable beyond any doubt. This claim was already supported by some grammaticality judgements from the literature in chapter 4. I refer the reader to that chapter for more details. The assumption that bare plurals unambiguously refer to kinds must be revised in the light of these data.

Sentences like (13), in which the kind predicate takes a definite singular, are unmarked. Speakers of Dutch agree on this.

(13)   *De ijsbeer   wordt met uitsterven bedreigd.*
         the polar bear is   with extinction threatened
         'The polar bear is threatened with extinction.'

This means that Cohen's claim that definite singulars unambiguously refer to kinds in characterizing sentences can be maintained. This hypothesis is the most parsimonious one.

How do we account for idiolects that do not accept sentences like (12a), but do accept (12b)? The most straightforward proposal would be that in these idiolects bare plurals introduce variables (as in the representation in (6)). We then expect sentences like (12b) to be acceptable and sentences like (12a) to be ill-formed and unacceptable.

How can we deal with the fact that there are speakers who do accept sentences like (12a)? A possible approach would be to assume that in such idiolects or varieties bare plurals unambiguously refer to kinds. There is, however, another perspective, which seems to be at least as plausible as the first one: in idiolects in which sentences like (12a) are acceptable, bare plurals are ambiguous. They can be interpreted as kind-referential or as variable-introducing terms. In this approach there are two varieties of Dutch, which are not totally complementary. In the following sections I will present additional arguments in favour of the latter perspective.

The argumentation above is based on Dutch data. However, the same point can be made for English. According to a number of authors, sentences such as (14) are well-formed. Sentence (14a) originates from Krifka et al. (1995: 10) and is considered well-formed by these authors. Cohen (1999: 40) deems sentence (14b) to be well-formed. On the other hand, Gerstner-Link & Krifka (1993: 968) judge sentences such as those in (14c) to be questionable. They precede (14c) with a question mark. At the same time, (15) is judged well-formed by Gerstner-Link & Krifka (1993: 966). If English bare plurals unambiguously referred to kinds, it would be difficult to understand why Gerstner-Link & Krifka find sentence (15) more acceptable than (14c). Our conclusion is that English characterizing sentences with bare plurals are subject to inter-speaker (and possibly intra-speaker) variation as well. The claim that English bare plurals unambiguously refer to kinds should be reconsidered.

(14)   a. %Lions will become extinct soon.
        b. %Dinosaurs are extinct.
        c. %Lions are extinct.

(15)   Lions are ferocious beasts

6.2.3   Bare plurals in non-subject positions

In 6.2.3.1, I will show that in direct object position bare plurals cannot refer to kinds at all. Approaches which assume that bare plurals unambiguously refer to kinds cannot explain this. Section 6.2.3.2 discusses bare plurals in postnominal PPs.

6.2.3.1   *Direct object position*
Bare plural direct objects have received a great deal of attention in the literature (cf. for example de Hoop & de Swart 1989, 1990; Laca 1990; Diesing 1992: 29–30; Longobardi 2001: 347–348; and Glasbey 2006). Many publications deal with the question why in some cases the variable introduced by the bare plural is bound by a generic operator and in other cases by an existential quantifier (cf. Glasbey 2006, see also note 5 below and Oosterhof 2006a). A question that has received far less attention is whether bare plural direct objects receive kind readings.

In 2.3.2, we observed that bare plurals are semantically ill-formed in the direct object position of predicates like *uitvinden* ('invent') and *uitroeien* ('exterminate') (cf. also Krifka et al. 1995: 71), which select kind-denoting direct objects.[4] This point is illustrated in (16a) and (17a). Notice that definite singulars are acceptable in this position (cf. (16b) and (17b)).

(16) a. *#Edison heeft gloeilampen uitgevonden.*
          Edison has   light bulbs   invented
      b. *Edison heeft de gloeilamp uitgevonden.*
          Edison has   the light bulb invented
          'Edison invented the light bulb.'

(17) a. *#De Hollanders hebben dodo's uitgeroeid.*
          the Dutch   have   dodos exterminated
      b. *De Hollanders hebben de dodo uitgeroeid.*
          the Dutch   have   the dodo exterminated
          'The Dutch exterminated the dodo.'

The sentences in (16a) and (17a) are clearly unacceptable since bare plural direct objects do not take kind readings, but only get variable-introducing interpretations (cf. representation (6)).

An important point is that sentences like (16a) are acceptable under the following 'taxonomic' interpretation: Edison invented *some* kinds (or types) of light bulbs. A similar taxonomic interpretation is not available in (17a), since there are no subspecies of the dodo. If there had been subspecies, the sentence would have been acceptable under a taxonomic reading. The taxonomic interpretation corresponding to sentences like (16a) can be represented as in (18). Recall that in section 3.5 we proposed that taxonomic interpretations can be represented by assuming that **gloeilamp'** corresponds to the set of kinds of light bulbs.

(18) $\exists x$ [**gloeilamp'**(x) & **uitvinden**(**Edison**,x)]
      'There is a kind of light bulb which is invented by Edison.'

Under these assumptions, the sentence is true if and only if Edison invented some kinds of light bulbs, which is the desired result.

Crucially, the representation in (18) is similar to the one in (6) and not to the one in (3). The fact that sentences such as (16a) receive this reading therefore confirms the hypothesis that bare plural direct objects only receive interpretations in which they introduce variables.

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4. This claim is based on the judgements of one Dutch and four Flemish native speakers of Dutch.

Under this analysis, we predict that a bare plural in direct object position is well-formed under the (non-taxonomic) characterizing reading. This prediction is borne out. Dobrovie-Sorin (1998: 11) writes: "In the object-position of verbs such as *love, hate, respect*, etc., [bare noun phrases] can take the generic [i.e., characterizing] (…) reading" (cf. also Longobardi 2001). Glasbey (2006) identifies such verbs as psychological verbs with experiencer subjects.[5] The corpus examples in

---

5.   Glasbey (2006) and Oosterhof (2006a) note that bare plural objects of psych verbs like *hate* do not get existential readings (cf. also Dobrovie-Sorin 1998). Sentence (ia) below only receives the reading represented in (ii). At the same time, sentences like (ib), in which stage-level predicates are used, are ambiguous: (ib) takes (at least) two different characterizing readings, which are given in (iii). The representations in (iii) account for the different readings by postulating different partitions of the underlying semantic material (Krifka et al. 1995: 42). Under the reading represented in (iiia) *zeehonden* has an existential interpretation.

(i)   a.   *Deze stroper   haat zeehonden.*
              'This poacher hates seals.'
       b.   *Deze ijsbeer   eet zeehonden.*
              'This polar bear eats seals.'

(ii)   GEN[x;][**zeehond**(x)][**haten**(**deze stroper**,x)]
       'In most cases in which x is a seal, this poacher hates it.'

(iii) a.   GEN[s;x][**in**(**deze-ijsbeer**,s)] ∃x[**eten**(**deze-ijsbeer**,x,s) & **zeehond**(x)]
              'In most situations s that contain the relevant polar bear, it eats a seal.'
       b.   GEN[x,s;][**zeehond**(x) & **in**(x,s) & **in**(**deze-ijsbeer**,s)][**eten**(**deze-ijsbeer**,x,s)]
              'In most situations in which there is a seal available, the relevant polar bear eats the seal.'

The second interpretation of sentence (ib), given in (iiib), is difficult to get. To get this reading, suppose that a certain polar bear normally eats fish and carrots. One day, this food is not available and a (cruel) zookeeper asks a colleague: "Does this polar bear eat seals?" There has only been one situation in the past where the other zookeeper tried to feed the polar bear a seal. In that unique situation, the bear accepted the seal. As a consequence, there seems to be only one appropriate situation that fulfils the conditions in the restrictor, but in that situation the conditions in the nuclear scope are met. This seems to be enough to make the sentence true in the second interpretation, which corresponds to (iiib).

How can this difference between (ia) and (ib) be explained? Kratzer (1995: 131) uses the following prohibition against vacuous quantification: "For every quantifier Q, there must be a variable x such that Q binds an occurrence of x in both its restrictive clause and its nuclear scope." If we assume that stage-level predicates like *eten* come with a variable s over situations, we understand that it is not necessary for the variable x to be bound by the generic operator in its restrictor. So, *zeehonden* in (ib) can receive an existential interpretation. Individual-level predicates like *haten* do not have a variable over situations. As a consequence, vacuous quantification can only be prohibited if GEN binds the variable x in its restrictor. This gives rise to a characterizing interpretation of *zeehonden*. For another recent account see Glasbey (2006).

(19) illustrate that Dutch is similar to English in that bare plural direct objects in sentences like (19) receive characterizing readings, just like English bare direct objects.[6]

(19)   a.   (…)*Gwyneth Paltrow haat dronken vrouwen.*[7]
                  'Gwyneth Paltrow hates drunk   women.'
       b.   *Hoe ik leerde   slakken te waarderen.*
            how I learned snails   to appreciate
            'How I learned to appreciate snails.'
       c.   *Het is een evenwichtige   hond. (…) Hij (…) verafgoodt kinderen.*
            'It is a   well-balanced dog.   He   adores   children.'

A semantic representation of (19a) can be found in (20) (cf. the similar representation in (6)).

(20)   GEN[x;][**dronken**(x) & **vrouw**(x)][**haten**(**Gwyneth Paltrow**,x)]
            'In most cases in which x is a drunk woman, Gwyneth Paltrow hates x.'

Notice (for completeness' sake) that sentences such as (21), in which a definite singular is used in the direct object position of *haten* ('hate'), are well-formed as well.

(21)   *Ik ben een racist. Ik haat de   vreemdeling.*[8]
            'I am a   racist. I   hate the foreigner.'

In this sentence, the definite singular receives a kind-referential interpretation, just as in (16b) and (17b). A representation of this sentence is presented in (22).[9]

Glasbey's approach rests on the fact that psych verbs with experiencer subjects do not have an eventuality argument. Of course, this is reminiscent of earlier approaches such as Kratzer (1995), just like the account presented by Oosterhof (2006a).

6.   One Dutch and four Flemish speakers of Dutch judge such sentences acceptable.

7.   The example sentences originate from www.hln.be, www.beleefbibliotheek.nl and www.ppha.be/rassenNL/Gos_Datura_Catala.html (April/September 2006).

8.   The sentence originates from www.chroom.net/kerstgedichten.htm (June 2006).

9.   Sentence (21), in which a definite singular is used, is less natural than the sentences in (19), in which bare plurals are used. In this chapter, we argue that definite singulars (such as *de vreemdeling* in (21)) unambiguously refer to kinds. Furthermore, we have observed that bare plural direct objects receive variable-introducing interpretations and do not receive kind-referential readings. Sentence (21) is semantically more complex than (19): interpreting sentence (21) involves conceptualizing foreigners as a kind. Probably, this is the reason why (21) sounds less natural than (19). This difference in 'naturalness' cannot be accounted for under the hypothesis that bare plurals as well as definite singulars unambiguously refer to kinds (cf. Cohen 1999 and others).

(22)　GEN[x;][C(↑**vreemdeling**)(x)][**haten**(**ik**,x)]
　　　'In most cases in which x is an object of the kind corresponding to
　　　vreemdeling, I hate x.'

By assuming that bare plurals do not unambiguously refer to a kind but can also receive a variable-introducing interpretation, we can account for the fact that sentences like (19) are well-formed, while at the same time (16a) and (17a) are ill-formed. Proposals like Chierchia 1998, which assume that bare plurals unambiguously refer to kinds, cannot deal with this fact.

6.2.3.2　*Complement position in a postnominal PP*

In (23), bare plurals are used in positions governed by the preposition *van*.[10] The relevant PPs are embedded inside larger noun phrases which correspond to kind-referential interpretations.

(23)　a. %*Bell is de uitvinder van telefoons*
　　　　　Bell is the inventor of   telephones
　　　　　'Bell is the inventor of the telephone.'
　　　b. %*Het uitsterven van ijsberen   lijkt   onafwendbaar.*
　　　　　the extinction of   polar bears seems inevitable
　　　　　'The extinction of the polar bear seems inevitable.'
　　　c. %*De evolutie   van ijsberen   is het bestuderen waard.*
　　　　　the evolution of   polar bears is the studying   worth
　　　　　'The evolution of the polar bear is worth studying.'

In (24), definite singulars are used in the same position.

(24)　a.　*Bell is de uitvinder van de telefoon.*
　　　　　'Bell is the inventor of   the telephone.'
　　　b.　*Het uitsterven van de ijsbeer   lijkt   onafwendbaar.*
　　　　　'The extinction of   the polar bear seems inevitable.'
　　　c.　*De evolutie   van de ijsbeer   is het bestuderen waard.*
　　　　　the evolution of   the polar bear is the studying   worth
　　　　　'The evolution of the polar bear is worth studying.'

The acceptability of the sentences in (23) is subject to inter-speaker variation. Some of my informants rate such sentences as unacceptable. The sentences in (24)

10.　The preposition does not have the same semantic or syntactic status in each sentence. In the (a)-sentences, the preposition *van* indicates the objective genitive: the complement of the preposition corresponds to the object of the noun phrase. In the b- and c-sentences, the preposition *van* indicates the subjective genitive: the complement of the preposition corresponds to the subject of the infinitive or noun phrase.

are acceptable beyond any doubt.[11] These data show that complement positions in postnominal PPs are to some degree similar to the direct object position.

Importantly, the sentences in (25) are completely acceptable.[12]

(25) a. *Het doden van ongeboren kinderen is in Ierland verboden.*
          the killing of   unborn   children is in Ireland forbidden
          'In Ireland, the killing of unborn children is forbidden.'
      b. *Het brullen van tijgers is diep en   machtig.*
          'The roaring of   tigers is deep and mighty.'
      c. *De   poten van ijsberen   zijn dichtbehaard.*
          'The paws of   polar bears are densely hairy.'

These sentences (can) receive a characterizing interpretation, in which a generalization about the bare plural is expressed.[13] By assuming that bare plurals are ambiguous between the interpretations represented in (3) and (6), we can account for these data: it is possible that speakers who judge bare plurals to be unacceptable under kind-referential readings in sentences like (23), do accept the sentences in (25), in which bare plurals receive characterizing readings. Proposals that assume that bare plurals unambiguously refer to kinds (Chierchia 1998 & Cohen 1999, 2002, among others) cannot deal with these data.

Notice (for completeness' sake) that the sentences in (26), in which kind-referential definite singulars are used in the same positions as in (25), are acceptable as well.[14]

(26) a. *Het doden van het ongeboren kind is in Ierland verboden.*
          the killing of   the unborn   child is in Ireland forbidden
          'In Ireland, the killing of the unborn child is forbidden.'

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11.   These claims are based on the intuitions of one Dutch and four Flemish speakers of Dutch. Two speakers judge sentences such as (23) unacceptable. Three other speakers judge sentences like (23) to be less acceptable than sentences like (24), but they do not judge them completely unacceptable.

12.   Again, the preposition does not have the same semantic or syntactic status in each sentence. In (25a), the preposition *van* indicates the objective genitive: the complement of the preposition corresponds to the object of the noun phrase. In (25b), the preposition *van* indicates the subjective genitive: the complement of the preposition corresponds to the subject of the infinitive or noun phrase. In (25c), the preposition *van* indicates a mereological relation: the paws are part of the polar bears.

13.   This claim is based on judgements of four Flemish speakers and one Dutch speaker.

14.   These sentences are similar to (21) in that they are less natural than sentences with bare plurals (cf. (25)).

    b.   *Het brullen van de tijger is diep en machtig.*[15]
        'The roaring of the tiger is deep and mighty.'
    c.   *De poten van de ijsbeer zijn dichtbehaard.*[16]
        'The paws of the polar bea rare densely hairy.'

6.2.4 Common nouns that cannot be used to refer to kinds

Although from a theoretical point of view no restrictions on the operation '↑' need to be postulated, we do not expect that in language use all common nouns can be used as kind-denoting terms with the same ease. It is, however, probably impossible to give an exact semantic definition of what common nouns are candidates to refer to kinds. To a certain degree, it is up to the language user to consider a category as a kind. Chierchia (1998: 348) puts it this way: "What counts as kind is not set by grammar, but by the shared knowledge of a community of speakers. It thus varies, to a certain degree, with the context, and remains somewhat vague." In this way, the definition of what counts as a kind is a task of pragmatics. This does not mean that pragmatic restrictions on what counts as a kind are not relevant to the study of natural language semantics and to our argumentation.

In 6.2.4.1 and 6.2.4.2, I will discuss two sorts of common nouns that usually do not correspond to kinds. Definite singulars are used less frequently with such common nouns than bare plurals. Section 6.2.4.1 is devoted to common nouns that correspond to "non well-established kinds" (cf. Krifka et al. 1995: 11, see also Vendler 1967; Nunberg & Pan 1975; and Carlson 1977). Section 6.2.4.2 discusses common nouns that are located relatively high in a taxonomic hierarchy (cf. the corpus study presented in 5.2). I argue that the observations discussed in 6.2.4.1 and 6.2.4.2 are arguments in favour of the claim that while definite singulars unambiguously refer to kinds, bare plurals can receive non-kind-referential readings.

Section 6.2.4.3 discusses definite singulars such as *de succesvolle politicus* ('the successful politician'), which are modified by an adjective. In the literature it has been observed that in characterizing sentences such definite singulars are more acceptable than unmodified definite singulars like *de politicus* ('the politician'). This is another example of the restricted use of definite singulars. The question is, however, whether this restriction can be treated on a par with the restrictions discussed in 6.2.4.1 and 6.2.4.2.

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15.   This example originates from http://home.hetnet.nl/~wuwo/song_shiming.htm (June 2006).

16.   This example originates from www.dierenrijkeuropa.nl (June 2006).

6.2.4.1 *Non well-established kinds*

6.2.4.1.1 *Coke bottles and green bottles.* It has been noticed in the literature (cf. for example Krifka et al. 1995: 11–12) that English kind-referential definite singulars can only be used to refer to 'well-established' kinds. Thus, the difference between (27a) and (28a) can be described by assuming that *Coke bottle* corresponds to a well-established kind, while there is no 'well-established' kind for *green bottle*. This restriction does not apply to bare plurals, as (28b) shows.

(27)   a.   The Coke bottle has a narrow neck.
       b.   Coke bottles have a narrow neck.

(28)   a. *??The green bottle has a narrow neck.*
       b.   Green bottles have a narrow neck.

The sentences in (29) and (30) show that the same holds for Dutch.

(29)   a.   *De   coca-cola fles   heeft een smalle   hals.*
           'The coke   bottle has a   narrow neck.'
       b.   *Coca-cola flessen hebben een smalle hals.*
           'Coke   bottles have   a   narrow neck.'

(30)   a. *?#De   groene fles   heeft een smalle   hals.*
           'The green bottle has a   narrow neck.'
       b.   *Groene flessen hebben een smalle   hals.*
           'Green bottles have   a   narrow neck.'

If we follow the assumption that bare plurals unambiguously refer to kinds (in characterizing sentences), the fact that (30a) is (relatively) unacceptable cannot be accounted for by assuming that *groene fles* does not correspond to a kind, since then we would predict (30b) to be as odd as (30a). That is why the unacceptability of (30a) must be accounted for by assuming that definite singulars have to fulfil an additional condition: the kind needs to be 'well-established'. This implies that it is possible for an entity to be a kind, without being a 'well-established' kind. This ontological assumption is represented in figure 6.1.
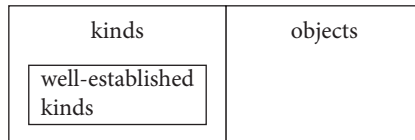
Figure 6.1

If we assume that (Dutch and English) definite singulars unambiguously refer to kinds, while bare plurals are ambiguous, a more economical and probably more

kinds	objects

Figure 6.2

elegant description becomes possible. The ontology we need can be represented as in figure 6.2. If we assume that definite singulars always refer to kinds, we can explain the unacceptability of (30a) simply by stating that *groene fles* does not fulfil the requirement(s) that a category has to fulfil in order to be considered as a (potential) kind. Informally speaking: if something is not well-established as a kind, it is simply not a kind and it cannot be referred to by kind-referential noun phrases. The well-formedness of sentences like (28b) and (30b) can then be explained by claiming that bare plurals in such sentences have a second reading in which they do not refer to a kind, but introduce a variable which can be bound by the generic operator.

6.2.4.1.2 *Natural and nominal kind terms.* The notion 'well-established kind' is reminiscent of the distinction between 'natural kind terms' and 'nominal kind terms' (cf. Pulnam 1983; Cruse 1986: 140–143; and Krifka et al. 1995: 107–113). The expression *nominal kind* originates from Schwartz (1979). Krifka et al. (1995: 111–112) describe the distinction between natural and nominal kinds as follows:

> "Standard examples cited for nominal kinds are nouns such as *bachelor* (which can be described as "an unmarried male of marriageable age"), *pediatrician* ("doctor specializing in the care and medical treatment of children") (…). However, it seems that we can get definite (…) NPs with these nouns, suggesting that they are not pure nominal kind terms: (…)
>
> a. The bachelor had a major influence on the *Sturm und Drang* movement of the late 1700s.
> b. Although the pediatrician has specialized in childhood maladies, he remains a generalist who looks after the whole patient.
>
> Since these are not clear cases of nominal kind terms, perhaps [we] should look at syntactically complex nouns such as (…) *sweetened lemon* (…) as possibly clearer cases. (…) We have seen that we can use definite (…) NPs only with "well-established" kinds such as *the lemon*, not with newly constructed concepts – *the sweetened lemon* does not make a pleasant generic [i.e., kind-referential] NP. Thus at least we can say that clear cases of nominal kinds cannot be referred to by definite (…) NPs."

Before we can discuss the importance of the distinction between nominal and natural kind terms, we should first clarify a terminological point. *Nominal* and *natural kind terms* are notions which apply to common nouns. These notions

should not be confused with *kinds* as defined in chapter 3 of this book. I will explain this with an example. Suppose that we conclude that *lemon* is a natural kind term (which seems to be suggested in the passage cited above). This does not mean that the noun *lemon* cannot be used in sentences such as (31).

(31)   I am eating this lemon.

In sentences such as (31), *lemon* does not correspond to a kind-referential interpretation: *this lemon* refers to one specific lemon, without alluding to the kind which corresponds to the definite singular *the lemon*.

The crucial observation suggested in the passage from Krifka et al. cited above is that we can get definite noun phrases only with natural kind terms and not with (clear cases of) nominal kind terms, such as *sweetened lemon*. In this way, the contrast between (29a) and (30a) could be a manifestation of this more general phenomenon. Let us consider the hypothesis in (32) and apply it to the data in (29) and (30).

(32)   Hypothesis:
        Only natural kind terms can be used to refer to kinds (as defined in
        chapter 3 and in Krifka et al. 1995: 2–3).

Suppose that *coca-cola fles* ('Coke bottle') is a natural kind term and that *groene fles* ('green bottle') is a nominal kind term. We would then expect sentence (29a) to be acceptable and (30a) to be unacceptable: since definite singulars in characterizing sentences unambiguously refer to kinds, sentences such as (29a) and (30a) are only acceptable if the relevant noun phrase can refer to a kind. The problem with (30a) is that *groene fles* is not a natural kind term and cannot be used to refer to a kind (cf. the hypothesis in (32)).

The question is: Does it make sense to assume that *coca-cola fles* is a natural kind term and that *groene fles* is a nominal kind term? Cruse (1986: 140) writes:

> "One of the ways in which natural kind terms differ from nominal kind terms is that the latter correspond in a fairly precise way to analytic definitions containing a superordinate with a modifier. Thus, in general, the replacement of, say, *stallion* by *male horse* yields a logically equivalent sentence: *I saw a stallion* entails and is entailed by *I saw a male horse*. (…) Natural kind terms, however, are different (…). Consider the relation between *horse* and *animal*. (…) there is no modification of *animal* which will yield an expression equivalent to *horse* in the way that *male horse* is equivalent to *stallion*. (…) [W]hile one can say that a mare and a stallion differ in respect of sex, there is no comparable way of expressing the difference between, say, a horse and a cow. Intuitively, one would be inclined to say that horses and cows differed in an indeterminately large number of ways; in the same way, in order to give an account, which matched the average person's knowledge, of what sort of an animal a horse was, would require an encyclopaedic description of indeterminate size and complexity."

On the basis of this, we can argue that *groene fles* ('green bottle') is a nominal kind term. In the same way that a mare and a stallion differ in respect of sex, green bottles and, for example, red bottles differ in respect of their colour. Furthermore, the syntactically complex noun *groene fles* has the form of an analytic definition containing a superordinate (*fles*) with a modifier (*groene*). This is in agreement with Cruse's (1986) definition of nominal kind terms.

Coca-cola fles ('Coke bottle') is different from *groene fles* ('green bottle'). It is difficult, if not impossible, to give an analytic definition of *coca-cola fles*. It will not be adequate to define *coca-cola flessen* as bottles containing Coke: if a *coca-cola fles* does not contain *coca-cola*, it can still be referred to as a *coca-cola fles*. Another possibility is to define *coca-cola fles* as bottles manufactured to contain Coke. However, this definition is problematic as well. Suppose one day Coke bottles will be used for orange juice as well. Then language users would (possibly) continue to call the relevant bottles *coca-cola flessen*. Consequently, giving an analytic definition of *coca-cola fles* is highly problematic, if not impossible. This is in agreement with the idea that *coca-cola fles* corresponds to a natural kind term.

6.2.4.1.3   Mens *('human'),* man *('man') and* vrouw *('woman').*   There is one further interesting consequence of the hypothesis in (32). In section 5.4, the results of a corpus study were presented that investigated the differences between the nouns *mens* ('human/man'), *man* ('man') and *vrouw* ('woman'). The distinction between natural and nominal kind terms can be applied to these nouns. The Dutch common nouns *man* and *vrouw* are quite similar to *stallion*. For example, *man* and *vrouw* correspond to analytic definitions containing a superordinate with a modifier and the replacement of *man* by *mannelijk mens* ('male human') yields a logically equivalent sentence: *Ik zag een man* ('I saw a man') entails and is entailed by *Ik zag een mannelijk mens* ('I saw a male human'). The same point can be made for *vrouw* ('woman'). Our conclusion is that *man* and *vrouw* correspond to nominal kind terms.

The common noun *mens* ('human') can be treated on a par with *horse*. There is no modification of *dier* ('animal') which yields an expression equivalent to *mens* in the way that *mannelijk mens* ('male human') is equivalent to *man* ('man').[17] While one can say that *man* ('man') and *vrouw* ('woman') differ with respect to sex, there

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17.   One could claim that *mens* ('human') is equivalent to *menselijk dier* ('human animal'). Cruse (1986: 140) argues against such a claim: "It is no good saying that *equine animal* is equivalent to *horse*: *equine* is totally parasitic on *horse* – it means "resembling or pertaining to horses" – so *equine animal* is not a genuine analysis of the meaning of *horse*."

is no comparable way of expressing the difference between *chimpansee* ('chimpanzee') and *mens* ('human'). We conclude that *mens* is a natural kind term.

This means that we predict that definite singular noun phrases are used more frequently with the natural kind *mens* than with the nominal kind terms *man* and *vrouw* (cf. the hypothesis in (32)). This prediction was borne out by the results presented in section 5.4.

6.2.4.1.4   *Cohen's counterarguments.*   I will now return to the point from which we started: definite singulars refer to kinds unambiguously and bare plurals are ambiguous. Cohen (1999: 49) argues against this point of view: "[T]he greater productivity of bare plurals, as opposed to definite singulars, provides no evidence for the claim that the former do not always refer to kinds, whereas the latter always do."

One of the arguments Cohen gives is that there are contexts where a characterizing reading of (30a), repeated as (33), would be perfectly felicitous.

(33)   *?#De groene fles heeft een smalle hals.*

Cohen (1999: 48) cites Dayal (1992: 56), who presents the following scenario:

> "You are on a tour of a plant which makes bottles and the tour guide says, "we manufacture three types of bottles at this plant, green, blue and clear. The green bottle is our particular speciality. It has a long neck." I think there is no problem now in a generic [i.e., kind-referential] interpretation for the singular term."

Correct as this observation may be, it is not clear why it is an argument against the claim defended in this and the previous sections. Dayal's observation confirms Chierchia's (1998: 348) claim that "what counts as kind (…) varies, to a certain degree, with the context". The scenario sketched by Dayal illustrates that although normally *green bottle* does not correspond to a kind, special contexts may exist in which a kind of bottle is introduced that can be identified by language users as *the green bottle* (cf. also Krifka et al. 1995: 112). We predict that in such circumstances kind-referential definite singulars like *the green bottle* are acceptable. This does not contravene the claim that definite singulars unambiguously refer to kinds, while bare plurals can receive an alternative reading in which they introduce a variable.

Some further arguments of Cohen (1999: 48–49) will be discussed in section 6.2.4.2.

The observations presented in 6.2.4.1.1 provide a clearer understanding of the ambiguity of Dutch (and English) bare plurals in characterizing sentences. The fact that they are ambiguous does not imply that (all) language users necessarily distinguish between two different readings (i.e., bare plurals are not necessarily interpretatively ambiguous, cf. also Behrens 1998, 2005: section 3). Yet, as linguists,

we are able to distinguish between two different semantic interpretations. The fact that sentences like (30b), repeated as (34), are acceptable shows that bare plurals do not necessarily refer to kinds, while the fact that sentences like (12a), repeated as (35), are judged acceptable by a number of speakers proves that they *can* be kind-referential in one of their readings. Speakers who consider (35) unacceptable only accept the variable-introducing reading of bare plurals.

(34)   *Groene flessen hebben een smalle hals.*

(35)   *% IJsberen worden met uitsterven bedreigd.*

6.2.4.2   *Common nouns that are located relatively high in a taxonomic hierarchy*
6.2.4.2.1   *Kinds, taxonomic hierarchies and prototypical information.*   In section 5.2, the results were presented of a corpus study in which we examined the frequencies of definite singulars, indefinite singulars, definite plurals and bare plurals in relation to four hierarchically ordered taxonomic categories. One conclusion from this study was that although sentences such as (36a) are not totally impossible, there is a correlation that definite singulars are used less frequently in characterizing sentences when the category is located higher in the hierarchy.

(36)   a.   *?Het zoogdier brengt levende jongen ter wereld.*
             the mammal brings living   young to world
             'The mammal gives birth to live young.'
       b.   *Zoogdieren brengen levende jongen ter wereld.*
             mammals bring   living   young to world
             'Mammals give birth to live young.'

In this section, I will argue that sentences such as (36a) are odd as a result of the fact that nouns like *zoogdier* usually do not correspond to kinds. The reason is that the properties of such categories conflict with the requirement(s) that a category has to fulfil in order to be considered as a (potential) kind.

   Chierchia is probably right that what counts as a kind remains vague. However, it is a reasonable assumption that language users can only perceive groups of individuals or objects as kinds if the individuals can be distinguished from other individuals by common characteristics. From this point of view, it is not illogical that there is a correlation between the acceptability (and the frequency) of sentences such as (36a) and levels in a taxonomic hierarchy: if a category is located higher in a hierarchy, the members of the category have fewer attributes in common. Such higher categories correspond to relatively heterogeneous sets of items. Bowdle & Ward (1995) refer to the heterogeneity of a category as 'category variability'. As one moves from lower levels in a taxonomic hierarchy to higher levels (i.e., from 'subordinate' to 'superordinate' categories, see in particular Kay 1971; Berlin, Breedlove & Raven 1973; Rosch et al. 1976; Cruse 1986;

Bowdle & Ward 1995), there is a gradual reduction in the number of attributes shared by the members of the category. Consequently, it becomes more difficult for language users to distinguish the members of the category from members of other categories and to perceive the category as a kind.[18]

In the literature (Krifka et al. 1995: 46–48), attention has been drawn to the connection between genericity and prototypical information. The prototype approach assumes that from among the entities which are categorized as an instance of a certain concept, we can choose entities which are the "best" representations of that concept (Hempel & Oppenheim 1936). The most typical representatives of a concept are called 'prototypes'. Plausibly, prototypes can help language users to consider something as a kind. This can be illustrated by the characterizing sentence in (37), in which a kind-referential noun phrase is used.

(37)   (…) *de beer loopt (…) op platte poten.*[19]
        '(…) the bear walks   on flat   feet.'

Although there are considerable differences between bear species, the following description can be given of prototypical bears: bears are large animals with short legs, a stub of a tail, small, round ears and forward facing eyes.

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18.   The behaviour of definite singulars as described in this study is reminiscent of an observation made by Bowdle & Ward (1995), who write that "the felicity of plural generic demonstratives varies across analogous contexts depending on the specificity of the evoked kind". This is illustrated in (i) (from Bowdle & Ward 1995: their examples (9) and (10)). The kind being referenced in (ia) is a more specific instantiation of the category in (ib).

(i)   a.   A: My roommate just bought a Labrador.
             B: Those Labradors make great pets.
       b.   A: My roommate just bought a dog.
             B: #Those dogs make great pets.

Example sentences pointing in the same direction can be constructed for Dutch:

(ii)   A: *Mijn kamergenoot kocht   zojuist een Labrador / hond*
             my   roommate   bought just   a   Labrador / dog
             'My roommate just bought a Labrador/dog.'
       B: *Die   Labradors / #Die   honden zijn toch fantastische huisdieren*
             those Labradors / those dogs   are PRT great   pets
             'Such/Those dogs/Labradors are really great pets.'

Bowdle & Ward (1995) account for such data by making use of notions like 'kind specificity' and 'category variability'. However, they do not relate their account to the notion of 'kind reference' as defined in this study.

19.   The example sentence originates from Wood, Daniel. 1997. *Beren*. Cologne: Könemann Verlagsgesellschaft.

It is, however, more difficult to give a prototypical description for carnivores or mammals, because there are fewer common features. So, it is less easy to consider a category like mammals as a kind than it is to consider a category such as bears as a kind.

Notice that the distinction between lower categories such as *ijsbeer* ('polar bear') and higher categories such as *zoogdier* ('mammal') is independent of the distinction between natural and nominal kind terms. *Zoogdier* as well as *ijsbeer* corresponds to a natural kind term: both nouns do not correspond to analytic definitions containing a superordinate with a modifier. There is no modification of *dier* ('animal') which will yield an expression equivalent to *zoogdier* or *ijsbeer* in the way that *male horse* is equivalent to *stallion*. Intuitively, one would be inclined to say that polar bears and black bears as well as mammals and reptiles differ in an indeterminately large number of ways. Importantly, the hypothesis in (32) states that only common nouns which correspond to natural kind terms *can* be used to refer to a kind. This does not imply that *every* natural kind term always refers to a kind.

6.2.4.2.2   *Kinds and basic level categories.*   There is a potential discrepancy between our proposal and the psychological literature. According to the psychological literature, it should be possible that categories are "too low" in a taxonomic hierarchy as well. In the relevant literature, categories that are easiest to consider as distinguishable from others are called basic level categories. For biological categories, Rosch (1978: 32) claims that the basic level is the level of the genus. So, it is actually 'bear', not 'polar bear', which is the basic level (Krifka et al. 1995: 76). From this perspective, it seems unexpected that definite singulars are used most frequently with categories like *ijsbeer* and not with *beer*.

How can we account for this discrepancy? The following two considerations are relevant in this respect. A first point is that the basic level might not be the same as the level at which categories can be most easily perceived as kinds (cf. also Bowdle & Ward 1995). Cruse (1986: 146) writes:

> "The most significant level of a taxonomy from the point of view of the speakers of a language is undoubtedly the **generic level**. This is the level of the ordinary everyday names for things and creatures: *cat*, *oak*, *carnation*, *apple car*, *churchcup* etc. Items at this level are particularly likely to be morphologically simple, and to be 'original' in the sense that they are not borrowed by metaphorical extension from other semantic areas. This is also the level at which the greatest number of items is likely to occur (…)."
>
> (original emphasis, endnotes deleted, AO)

There is no reason why we should not assume that these are two separate phenomena: i) the *generic level* is the basic level, i.e., the level of ordinary names for things and

creatures, at which the largest number of items occur and ii) the *species level* is the level at which items can be most easily perceived as kinds (as defined in this study).

A second point is that the way the average language user organizes biological categories into a taxonomic hierarchy differs from the way a scientist would classify these categories. A biologist may assume the hierarchy represented in figure 6.3.
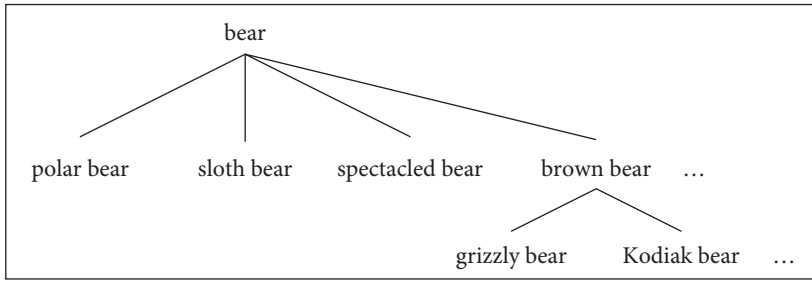
Figure 6.3 Biological taxonomical hierarchy.

The average language user probably classifies bears according to a somewhat different taxonomic hierarchy. This can be illustrated by corpus examples like (38).

(38)   *Gladiatoren vochten ook soms   wel eens tegen: leeuwen, tijgers, panters,*
       gladiators   fought also sometimes PRT PRT against lions   tigers leopards
       beren en ijsberen.[20]
       bears and polar bears
       'Gladiators also sometimes fought against lions, panthers, bears and polar bears'.

In this sentence bears and polar bears seem to be considered as belonging to the same taxonomic level. The average language user probably classifies polar bears and bears according to the hierarchy represented in figure 6.4 below. We assume that the noun *bear* corresponds to two items (*bear*[1] and *bear*[2]), functioning at different levels of taxonomic specificity. Cruse (1986: 149–153) presents some other examples of the same phenomenon. If this is correct, the noun *bear* (or Dutch *beer*) is not only associated with the superordinate item *bear*[1], but also corresponds to *bear*[2], which functions at the same level as *polar bear*. So, the common noun *bear* does not unambiguously correspond to a basic level category. This illustrates that it is not easy at all to identify basic level categories and to conclude that there is a discrepancy between our findings and the psychological literature.

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20. The sentence originates from http://www.scholieren.com/werkstukken/18013 (February 2006).
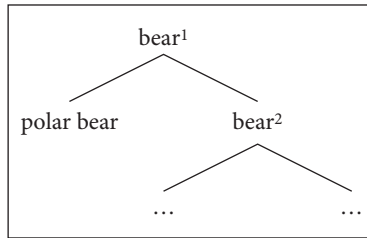
Figure 6.4 The average language user's taxonomic hierarchy.

The conclusion of this section is that the properties of items like *zoogdier* ('mammal') conflict with the requirement(s) that a category has to fulfil in order to be considered as a (potential) kind. This explains why kind-referential definite singulars are problematic with such items. There is a potential discrepancy between this conclusion and Rosch's (1978) hypothesis that the basic level is the level of the genus. Above we have suggested two lines of argument to account for this discrepancy.

6.2.4.2.3 *Cohen's counterarguments.*   Cohen (1999) provides some arguments against the idea that the contrast illustrated in (36), repeated as (39), can be accounted for by assuming that definite singulars unambiguously refer to kinds while bare plurals receive an alternative variable-introducing reading.

(39)   a. *?Het zoogdier brengt levende jongen ter wereld.*
       b.   *Zoogdieren brengen levende jongen ter wereld.*

Cohen (1999: 49) writes that "[t]here are additional, poorly understood factors affecting the productivity of the definite generic, which appear idiosyncratic and language dependent". Cohen points out the contrast between (40a), which is well-formed, and (40b), which is odd.

(40)   a.   The tiger lives in the jungle.
       b.   ?The dog barks.

The same holds for Dutch, as is illustrated in (41) (cf. (40) for translations).

(41)   a.   *De tijger leeft in de jungle.*
       b.   *?De hond blaft.*

Cohen claims that there is no reason to suppose that the kind *tiger* is better established than the kind *dog*. However, this claim is questionable: there is a clear difference between *the tiger* and *the dog*. Language users know that there is a wide variety of breeds of dogs (among which there are breeds that do not usually bark).

This makes it more difficult to speak of prototypical dogs. With regard to *the tiger*, there are differences between subspecies like the Bengal and Siberian tiger, but the average language user does not even know that these subspecies exist. For average language users, to distinguish tigers from other animals and to consider *the tiger* as a kind is less difficult than to consider *the dog* as a kind.

Cohen (1999: 49) continues that "there are languages where the equivalent of [40b] is perfectly acceptable, e.g., German." This would indeed be a problem for the description argued for in this and the previous sections, because there is no reason to assume that the kind corresponding to *dog* is "better established" in English than in German. However, the claim that (42a) is perfectly acceptable is questionable. I consulted two native speakers of German (with a linguistic background), who report that (42a) is much less natural than (42b), in which a bare plural is used.

(42) a. *?Der Hund bellt.*
      b. *Hunde bellen.*

So, our description is not contradicted by facts about German.

Thus, we have not given a formal semantic, but rather a pragmatic account of the correlation between the use of definite singulars and the location of categories in taxonomic hierarchies. It is impossible to formulate formal restrictions on the use of kind-referential definite singulars. Recall in this respect that in section 5.2 we concluded that (Dutch) definite singulars do sometimes refer to kinds that are located higher in the taxonomic hierarchy. In such sentences language users abstract away from properties that discriminate between subcategories of a kind.

6.2.4.3 *Modified common nouns*

The sentences in (43) and (44) are well-known examples illustrating that "the definite generic is often more acceptable when the descriptive content of the common noun is richer" (Cohen 1999: 48).

(43) a. ?The politician never misses a photo opportunity.
      b. The successful politician never misses a photo opportunity.

(44) a. Politicians never miss a photo opportunity.
      b. Successful politicians never miss a photo opportunity.

While (43a) is odd, (43b) is acceptable under a characterizing reading of the sentence. The sentences in (44), where bare plurals are used, are both acceptable. The same situation holds in Dutch, as is illustrated in (45) and (46).

(45)   a.   *?De   politicus   weet   wat   te doen en   te zeggen in elke   situatie.*
            'The   politician   knows   what   to do   and to say   in every situation.'
       b.   *De   succesvolle politicus   weet   wat   te doen en   te zeggen in*
            'The   successful   politician   knows   what   to do   and to say   in
            elke   situatie.[21]
            every   situation.'

(46)   a.   *Politici   weten wat   te doen en   te zeggen in elke   situatie.*
            'Politicians know   what to do   and to say   in every situation.'
       b.   *Succesvolle politici   weten wat   te doen en   te zeggen in elke*
            'Successful   politicians know   what to do   and to say   in every
            situatie.
            situation.'

Cohen (1999: 48) writes: "one would be hard pressed to argue that *successful politi-cian* is a well-established kind, whereas *politician* is not."

Cohen presents this as an argument against the claim that definite singulars unambiguously refer to kinds while bare plurals are ambiguous between the read-ings specified above. It is, however, not evident why this is an argument against this claim. In Oosterhof (2003), I assume that it is pragmatically more difficult to consider ↑**politician** as a kind than it is to consider ↑**successful-politician** as a kind. Oosterhof (2003) claims that stereotypical information makes it possible to consider the category of successful politicians as a kind. We could define a stereo-typical successful politician as a representative of this kind which has all stereoty-pical properties that are ascribed to him: a person who debates or reads documents deep into the night, gives the truth a twist, never misses a photo opportunity, knows what to do and say in every situation and so on. However, if the descrip-tive content of the common noun is less rich, it becomes less easy to construct a stereotype. We do not expect unsuccessful politicians to meet the characteristics of successful politicians. This makes it less easy to consider ↑**politician** as a suitable kind. Possibly, this is why (45a) is odd.[22]

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21.   The sentence originates from http://hangmat.etv.cx/forum (April 2006).

22.   The distinction between natural and nominal kind terms can be related to this disussion (cf. 6.2.4.1). Krifka et al. (1995: 111) refer to *pediatrician* ("doctor specializing in the care and medical treatment of children") as a standard example of a nominal kind term. *Politicus* ('politi-cian') can be treated on a par with *pediatrician*. In the same way that we can say that a mare and a stallion differ in respect of sex, we can say that a pediatrician and a politician differ in their profession. This is a characteristic of nominal kind terms (cf. the discussion in 6.2.4.1). The hy-pothesis in (32) therefore predicts that the noun *politicus* ('politician') cannot be used to refer to a kind. There is, however, no equally straightforward way of expressing the difference between a successful politician and an unsuccessful politician. A description of how the average language

However, I would not rule out the possibility that the fact that definite singulars are more acceptable when they are modified by an adjective is independent of the restrictions discussed in 6.2.4.1 and 6.2.4.2. Even if we revert to this assumption, our position is not less advantageous than Cohen's perspective. Cohen (1999: 49) leaves us with the conclusion that the acceptability of definite singulars "seems to depend on a variety of factors" and that these factors are "poorly understood" and "idiosyncratic". Our analysis accounts for at least some of the relevant factors.

6.2.5   Representative object interpretation

In chapter 3, we discussed the fact that noun phrases can refer to kinds even in episodic contexts. An example sentence is given in (47).

> (47)   *Op de derde dag van onze reis   naar de Azoren stonden we*
>   on the third day of our journey to   the Azores stood   we
>   *oog in oog met de blauwe vinvis, het grootste dier   ter wereld.*
>   eye in eye with the blue   whale, the largest   animal on earth
>   'On the third day of our journey to the Azores, we stood face to face with the
>   blue whale, the largest animal on earth.'

We call this kind of interpretation the *representative object interpretation*. In sentences like (47), the individual animal in the situation described is only relevant as a representative of the whole kind. If this is the case, a property can be projected from the individual to the kind (cf. Krifka et al. 1995: 83).[23,24] Sentences like (47) are represented as in (48) (abstracting away from the temporal properties of the sentence).

> (48) $\exists$x,s [C($\uparrow$**blauwe-vinvis**)(x) & **oog-in-oog-staan**(**we**,x,s)]
>   'There is a representative object of the kind corresponding to
>   *blauwe vinvis*, with which we came face to face.'

Sentence (49) demonstrates that *de blauwe vinvis* receives a kind reading.

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user defines a successful politician involves stereotypical properties like the ones mentioned above. Probably, such a definition requires the kind of description of indeterminate size and complexity that corresponds to natural kind terms. As a consequence, the hypothesis in (32) predicts that *succesvolle politicus* ('successful politician') can be used to refer to a kind.

23.   Note that definite singulars like *de blauwe vinvis* in (47) also admit definite/specific readings, in which they refer to a contextually determined object/individual. In this chapter, we focus on interpretations that are associated with genericity.

24.   There are (Flemish) speakers of Standard Dutch who do not get the representative object interpretation. An interesting question is whether this can be related to the dialectal background of the speaker. More research needs to be done in this area.

(49)   *We stonden oog in oog met de blauwe vinvis, die   met uitsterven*
       we stood   eye in eye with the blue   whale which with extinction
       bedreigd   wordt.
       threatened is
       'We came face to face with the blue whale, which is threatened with extinction.'

I refer the reader to chapter 3 for further discussion of the representative object interpretation. This kind of interpretation is impossible in sentences like (50).

(50)   *We stonden oog in oog met een blauwe vinvis.*
       we stood   eye in eye with a   blue   whale
       'We came face to face with a blue whale.'

Indefinite singulars like *een blauwe vinvis* cannot refer to a kind. A representation of sentence (50) is given in (51).

(51) $\exists$x,s [**blauwe-vinvis**(x) & **oog-in-oog-staan**(**we**,x,s)]
       'There is a blue whale, with which we came face to face.'

Observe that sentence (52) is semantically ill-formed.

(52)   #*We stonden oog in oog met een blauwe vinvis, die   met uitsterven*
       we stood   eye in eye with a   blue   whale, which with extinction
       bedreigd   wordt.
       threatened is

This confirms our claim that indefinite singulars do not receive a kind reading.

The assumptions made thus far in this study account for the contrast between (47) and (50). Given the assumption that definite singulars refer to kinds autonomously, we expect a kind-referential interpretation to be available in (47). Indefinite singulars, however, cannot receive kind readings. This observation was already made in chapter 3.

How do we interpret (53), where a bare plural is used?

(53)   We *stonden oog in oog met blauwe vinvissen.*
       we stood   eye in eye with blue   whales
       'We came face to face with blue whales.'

If bare plurals unambiguously refer to kinds, we expect that the only possible reading for (53) is the representative object interpretation. This turns out to be incorrect. The most natural (if not the only) reading of this sentence is the one represented in (51). This is in agreement with the fact that speakers of Dutch find sentence (54) unacceptable.[25]

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25.   This claim is based on the judgements of one Dutch and three Flemish native speakers of Dutch.

(54) #*We stonden oog in oog met blauwe vinvissen, die   met uitsterven*
     we stood   eye in eye with blue   whales   which with extinction
     bedreigd   worden.
     threatened are

Recall that sentences such as (55) are subject to inter-speaker variation.

(55) %*Blauwe vinvissen worden met uitsterven bedreigd.*
     blue   whales   are   with extinction threatened
     'Blue whales are threatened with extinction.'

This implies that according to a number of speakers of Dutch bare plurals do receive a kind reading as one of their readings. So, we would have expected that such speakers judge (53) acceptable under a representative object interpretation. This prediction is not borne out. While the informants mentioned in note 25 judge sentences such as (55) acceptable, they report that (53) cannot receive the representative object interpretation and that sentence (54) is unacceptable anyway. Our conclusion must be that although a percentage of speakers do accept bare plurals under kind readings, speakers of Dutch do not accept such readings for bare plurals in episodic contexts. This fact is unexpected from the perspective of Cohen's approach, in which bare plurals unambiguously refer to kinds. If we assume that bare plurals introduce variables in one of their readings, we make progress in our understanding of the semantics of sentences like (53).

6.2.6   Conclusion

In the previous sections, I have argued that bare plurals are ambiguous between a kind-referential and a non-kind-referential, variable-introducing interpretation. If they are used in characterizing sentences, they actually take two different logical representations.

Bare plurals show ambivalent behaviour: on the one hand, kind-selecting predicates can take bare plurals, which suggests that bare plurals refer to kinds. On the other hand, there are speakers of Dutch who consider such sentences unacceptable. Furthermore, bare plurals do not necessarily refer to entities that are well-established as kinds and do not get representative object readings in episodic sentences. By assuming that bare plurals are ambiguous, in the sense discussed above, this ambivalent behaviour of bare plurals can be accounted for.

Some arguments were presented in favour of the view that English bare plurals are ambiguous as well. An important point is that there is no consensus on the acceptability of English sentences in which kind predicates are attributed to bare plurals. Gerstner-Link & Krifka (1993: 968) assign this sentence type a question mark. Although we concentrated on Dutch bare plurals, it is plausible that our

description of the semantics of bare plurals can be extended to English as well (cf. Krifka et al. 1995: 11 for a similar assumption).

6.3   Bare mass arguments

6.3.1   Introduction

In the introduction to this chapter, we noted that Chierchia (1998) argues that bare mass terms are similar to bare plurals in that both noun phrase types unambiguously denote kinds. In the previous section, arguments were presented against the claim that bare plurals unambiguously refer to kinds. A natural question to ask is whether the same approach can be applied to bare mass terms?

There is an important difference between count nouns and mass nouns: while count nouns are normally preceded by a definite article in kind-referential interpretations, mass nouns with definite articles usually do not receive kind-referential interpretations. Sentences like (56b) unambiguously get episodic readings (cf. for example Devos, De Muynck & Van Herreweghe 1991: 43 and Broekhuis, Keizer & den Dikken 2003: 617).[26] If kind-referential interpretations had been available for definite mass noun phrases, we would have predicted that sentences like (56b) are acceptable under a characterizing reading. Recall that in chapter 3 we observed that kind-referring noun phrases can, in principle, be used in the subject position of characterizing readings. We used the relation C to represent such sentences.

(56)   a.   *Melk is gezond.*
             'Milk is healthy.'
       b.   *#De melk is gezond.*
             the milk is healthy
             'Milk is healthy.'

There are some exceptions to the generalization that mass nouns with definite articles usually do not receive kind readings. Broekhuis, Keizer & den Dikken (2003: 617) write: "It is not impossible, however, to find substance nouns with a definite determiner that do receive a generic [i.e., characterizing] interpretation." An example sentence from Broekhuis, Keizer & den Dikken is given in (57).

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26.   Recall from the questionnaire study presented in section 5.5 that in most local (or regional) varieties mass noun phrases with definite articles are judged by the respective informants to be (relatively) unacceptable. So, sentences like (56b) are unacceptable not only in Standard Dutch but also in varieties of Dutch.

(57) *De wijn / Het fruit is duur   dit jaar.*
the wine   the fruit is expensive this year
'Wine / Fruit is expensive this year.'

A natural sentence illustrating the same claim is presented in (58).

(58) *De Beaujolais is goed dit jaar!*[27]
'The Beaujolais is good this year!'

In general, definite mass noun phrases become (more) acceptable when used in contrastive contexts, as illustrated in (59).

(59) *De andijvie is duur   (dit jaar), maar de spinazie is goedkoop.*
the endive   is expensive (this year) but   the spinach is cheap
'Endive is expensive this year, but spinach is cheap.'

In this sentence (the price of) endive is contrasted with (the price of) spinach. Note that a similar point can be made for sentences like (57). Sentence (57) provides a contrastive context in that wine or fruit that is sold this year are (implicitly) compared with wine or fruit that was sold in previous years. These observations do not force us to abandon the generalization that speakers of Dutch (and almost every speaker of varieties of Dutch, cf. note 26) find sentences like (56b) unacceptable in neutral contexts.

In (60)–(63), some examples are given of bare mass terms in the subject position of kind predicates.

(60) a. *Eenkoorn (…) is een (…) tarwesoort (…). Eenkoorn is bijna   uitgestorven.*[28]
'Einkorn   is a   kinf of wheat.   Einkorn   is almost extinct.'
b. *Grondwitlof (…)   is met*
variety of Belgian endive grown on the ground is with
uitsterven bedreigd.
extinction threatened
'The variety of Belgian endive that is grown on the ground is threatened with extinction.'

(61) a. *Elementaire beleefdheid is met uitsterven bedreigd.*[29]
elementary politeness   is with extinction threatened
'Elementary politeness is threatened with extinction.'

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27.   This sentence originates from www.remake-fansite.nl/pages/nieuws.htm (September 2006).

28.   The examples originate from http://nl.efactory.pl/Eenkoorn (February 2006) and *De Standaard*, November 2, 2005.

29.   The example sentences are taken from http://lievekleinepiranasweblog.skynetblogs.be and http://leven.skynetblogs.be (February 2006).

    b. *(…)échte vriendschap is met uitsterven bedreigd.*
        real   friendship   is with extinction threatened
    'Real friendship is threatened with extinction.'

(62) a. *(…)rood haar is met uitsterven bedreigd.*[30]
        red   hair is with extinction threatened
    'Red hair is threatened with extinction.'

    b. *Blond haar wordt met uitsterven bedreigd.*
        blond hair is   with extinction threatened
    'Blond hair is threatened with extinction.'

(63) a. *Kabeljauw wordt met uitsterven bedreigd.*[31]
        cod   is   with extinction threatened
    'Cod is threatened with extinction.'

    b. *Houting is een zalmachtige die   (…) is uitgestorven in Nederland.*
    'Houting is a   salmonid   which   is extinct   in the Netherlands.'

These corpus sentences confirm the intuition that bare mass terms can appear in the subject position of kind predicates (cf. section 6.1). According to a percentage of native speakers of Dutch, these sentences become much less acceptable – if not unacceptable – if a definite article is inserted before the mass noun.[32, 33]

30.　The example sentences originate from a weblog and from http://forum.fok.nl/topic/812464/12/25 (February 2006).

31.　The example sentences originate from *Het Volk*, May 2004 and www.duurzaamzeeland.nl (February 2006).

32.　This claim is based on the judgements of one Dutch and six Flemish native speakers of Dutch. Three (Flemish) speakers judge sentences such as (i) acceptable; the other speakers consider such sentences unacceptable.

  (i)   %#De *bamboe is met uitsterven bedreigd.*
        the bamboo is with extinction threatened
        'Bamboo is threatened with extinction.'

33.　Note that there is a difference between (60)–(62) and (63). According to a percentage of speakers, the sentences in (60), (61) and (62) become unacceptable or less acceptable if the mass noun is preceded by a definite article. At first sight, this does not seem to be the case for the sentences in (63). In general, speakers judge sentences like (ia) below to be acceptable. The reason is, however, that *kabeljauw* and *houting* are examples of nouns that can be used as mass nouns or as count nouns. In sentences like (i) the noun *kabeljauw* is used as a count noun. This does not contradict the claim that according to a percentage of speakers *mass* nouns with definite articles are (relatively) unacceptable.

  (i) a. *De kabeljauw wordt met uitsterven bedreigd.*
         the cod   is   with extinction threatened
         'The cod is threatened with extinction.'

The fact that mass nouns with definite articles are much less acceptable or even unacceptable under kind-referential readings is relevant for our argumentation. In section 6.2, we compared bare plurals like *ijsberen* ('polar bears') to definite singulars like *de ijsbeer* ('the polar bear'). The conclusion from that comparison was that the definite singulars unambiguously refer to kinds in circumstances where the bare plurals are ambiguous or only receive a variable-introducing reading. A similar argumentation cannot be applied to mass noun phrases, because mass nouns with a definite article usually do not receive kind readings. This makes the discussion of the semantics of bare mass terms more difficult.

In the following sections, I describe the semantics of bare mass nouns. A comparison will be made with the semantic behaviour of bare plurals (as discussed in 6.2.2–6.2.5).

6.3.2   Inter-speaker variation

In section 6.2.2, we pointed out that the acceptability of sentences such as (12a), repeated as (64), is subject to inter-speaker variation.

(64) *% IJsberen worden met uitsterven bedreigd.*

This is an argument against Cohen's claim that bare plurals unambiguously refer to kinds.

Sentences such as (60)–(63), in which bare mass terms are used, are subject to inter-speaker variation as well. This claim is based on judgements provided by six native speakers. Four of these informants consider sentences like (60)–(63) acceptable. One informant does not accept such sentences. The remaining informant has the intuition that kind predicates can only be used in combination with noun phrases which have the feature [+animate]. As a result, this speaker judges sentence (60)–(62) unacceptable, but he finds (63) perfectly acceptable. So, only one informant judges sentences in which kind predicates are attributed to bare mass terms unacceptable in general. Although this is an indication that a percentage of speakers do not assign kind readings to bare mass terms, there is no doubt that we need to present more evidence in order to strengthen such a claim.

6.3.3   Bare mass nouns in non-subject positions

In section 6.2.3, we have observed that sentences such as (16a), repeated as (65), are unacceptable under the normal kind reading of the bare direct object.

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b. *Kabeljauwen   worden   met   uitsterven   bedreigd.*
    cods   are   with extinction   threatened.
    'Cods are threatened with extinction.'

(65) *#Edison heeft gloeilampen uitgevonden.*

The question is whether the same holds for bare mass terms in the direct object position of kind predicates like *uitvinden* ('invent'). There is no consensus among native speakers whether or not bare mass terms are acceptable in sentences such as (66).

(66) a. *Vlaamse monniken hebben %# (het) bier uitgevonden.*
          Flemish monks   have   (the) beer invented
          'Flemish monks invented beer.'
      b. *Die Duitse   banketbakker heeft %# (de) marsepein uitgevonden.*
          that German confectioner has   (the) marzipan invented
          'That German confectioner invented marzipan.'

This claim is based on judgements provided by five informants. Two of these informants judge sentences like (66) acceptable and two informants judge them unacceptable. The remaining informant finds such sentences 'passable', but according to this speaker, sentences in which mass nouns are preceded by a definite article are more acceptable.

    Interestingly, my informants agree that mass terms with definite articles are acceptable in sentences such as (66). Recall from section 6.3.1 that a percentage of speakers of Dutch judge sentences like (67) (cf. note 32), in which a mass term with a definite article is used in the subject position of a kind predicate, unacceptable.

(67)   *%#De bamboe is met uitsterven bedreigd.*

It is therefore rather surprising that in sentences such as (66) the forms with a definite article are the most natural ones (cf. chapter 8 for an account of this).[34]

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34.   Here we suggest that usually a mass noun with a definite article does not receive a kind reading. This is in agreement with the fact that sentences such as (56b) are unacceptable and that a percentage of speakers of Dutch judge sentences like (67) unacceptable. Sentences such as (66) are the exception and not the rule. Another sentence type is presented in (i) below. In these examples, a mass term is used in the direct object position of a psychological verb with an experiencer subject. If we assume that mass terms with a definite article do not normally receive a kind reading, we predict that characterizing sentences like (i) are unacceptable, just like (56b). This prediction is borne out: The five informants all judge the sentences in (i) to be unacceptable under the relevant reading, i.e., a characterizing reading in which the mass terms refer to a ('non-taxonomic') kind.

(i)   a. *#Ik haat de melk en de kaas.*
              I hate the milk and the cheese
      b. *#Ik prefeer het Ierse bier.*
              I prefer the Irish beer

These sentences originate from http://www.noxa.net/Anusja and www.musicmeter.nl/forum/14/944/0 (April 2006).

Importantly, there is no doubt that sentences such as those in (68), which contain psychological verbs with an experiencer subject, are acceptable.

(68) a. *ik haat melk en   kaas (…).*
          'I hate milk and cheese.'
      b. *Ik (..) prefereer Iers   bier.*
          'I   prefer   Irish beer.'

Speakers of Dutch agree on this.

As subtle as these data may be, they cannot be accounted for if we assume that bare mass terms unambiguously refer to kinds. If bare mass terms referred to kinds unambiguously, we would not have expected speakers of Dutch to accept them in the direct object position of kind predicates (cf. (66)) and acceptable in characterizing sentences like (68).

In section 6.2.3.2 we saw that bare plurals are unacceptable under kind readings not only in sentences like (65), but also in sentences such as (23a), repeated as (69).

(69) *#Bell is de uitvinder van telefoons.*

In (70), some example sentences are presented in which mass terms are used in the complement positions of postnominal PPs.

(70) a. *Die man is de uitvinder van %#(de) marsepein.*
          that man is the inventor of   (the) marzipan
          'That man is the inventor of marzipan.'
      b. *Het uitsterven van %#(de) bamboe is onafwendbaar.*
          the extinction of   (the) bamboo is inevitable
          'The extinction of bamboo is inevitable.'
      c. *Ik bestudeer de evolutie   van %# (het) gras.*
          I study   the evolution of   (the) grass
          'I study the evolution of grass.'

There is no consensus among native speakers whether or not bare mass terms are (fully) acceptable in such sentences. Out of five informants, three find bare mass terms acceptable in (70), but there are two other speakers who find bare mass nouns "less acceptable" than competing forms with definite articles. The fact that the acceptability of the bare mass terms in (70) is subject to subtle inter-speaker variation cannot be accounted for if we assume that in general Dutch bare mass noun phrases unambiguously refer to kinds.

The sentences in (71) illustrate the fact that bare mass terms in the complement position of postnominal PPs can receive characterizing readings. My informants agree on this.

(71) a. *Hij verafschuwt de geur van (#de) kaas.*
          he hates   the smell of (the) cheese
          'He hates the smell of cheese.'

b. *Het smeden van (#het) ijzer behoort tot het verleden.*
    the forging of   (the) iron belongs to the past
    'The forging of iron belongs to the past.'

c. *Het ontbranden van (#de) lijm kan brand veroorzaken.*
    the combustion of the   glue can fire   cause
    'The combustion of glue can cause a fire.'

This can be accounted for by assuming that bare mass terms can receive a variable-introducing reading.

6.3.4   Mass nouns that cannot be used to refer to kinds

In section 6.2.4.1, we observed that sentence (33), repeated as (73a), is odd as a characterizing sentence and that (34), repeated as (73b), is acceptable. We accounted for the unacceptability of (73a) by assuming that *groene fles* does not correspond to a kind. Sentence (73b) is acceptable, since bare plurals do not necessarily refer to kinds. In (29), repeated as (72), both sentences are acceptable, since *coca-cola fles* does correspond to a kind.

(72) a. *De coca-cola fles heeft een smalle hals.*
      b. *Coca-cola flessen hebben een smalle hals.*

(73) a. *??De groene fles heeft een smalle hals.*
      b. *Groene flessen hebben een smalle hals.*

These observations were related to the distinction between natural and nominal kind terms. We argued that *coca-cola fles* is a natural kind term and that *groene fles* is a nominal kind term. The assumption was made that only natural kind terms can refer to kinds (in the sense of chapter 3).

Can a similar point be made for bare mass terms? Consider sentences (74a) and (74b).

(74) a. *Zilverkleurige   vloeistof is giftig*
          'Silver-coloured liquid   is poisonous.'
      b. *?#De zilverkleurige   vloeistof is giftig.*
          the silver-coloured liquid   is poisonous

Sentence (74a) sounds a bit odd, but is not unacceptable. Sentence (74b) seems to be much less acceptable under a kind-referential reading of the subject. Analogous to the argumentation in 6.2.4.1, we could account for these data by assuming that the common noun *zilverkleurige vloeistof* is not suitable in kind readings.

At first sight, this seems to be a plausible conclusion. The syntactically complex noun *zilverkleurige vloeistof* has the form of an analytic definition containing a superordinate with a modifier. This follows Cruse's (1986) definition of nominal kind terms. So, analogously to the argumentation in 6.2.4.1, we could claim

that (74b) is unacceptable since *zilverkleurige vloeistof* does not correspond to a kind. However, this argumentation does not make sense. The point is that (75b) is (relatively) unacceptable as well, even though there is no reason to assume that *kwik* ('mercury') cannot be used to refer to kinds.

(75) a. *Kwik   is giftig.*
          'Mercury is poisonous.'
      b. *?#Het kwik   is giftig.*
          the mercury is poisonous

Krifka et al. (1995: 111) refer to *gold* as a "strict natural kind" term: while one can say that silver-coloured and blue liquids differ in colour, there is no comparable way of expressing the difference between, say, gold and silver. So, *kwik* ('mercury') corresponds to a natural kind term. As a result of the fact that sentences such as (75b) are nevertheless unacceptable, it is impossible to pursue the same line of reasoning as in 6.2.4.1.

A similar point can be made for sentences (76) and (77).

(76) a. *Metaal geleidt   electriciteit.*
          'Metal conducts electricity.'
      b. *#Het metaal geleidt   electriciteit.*
          the metal   conducts electricity

(77) a. *IJzer geleidt   electriciteit.*
          'Iron conducts electricity.'
      b. *#Het ijzer geleidt   electriciteit.*
          the iron conducts electricity

Metaal ('metal') is a general term for chemical elements that conduct electricity and have some other characteristics in common. Iron is an example of a metal. In a taxonomic hierarchy, *metaal* is located at a higher level than *ijzer* ('iron'). A possible conclusion is that *metaal* can be treated on a par with *zoogdier* ('mammal') (cf. 6.2.4.2) and that *metaal* is too high in the hierarchy to be used in sentences like (76b). So, the fact that (76a) is acceptable, whereas (76b) is unacceptable (or much less acceptable than (76a)) could be an argument that bare mass terms do not unambiguously refer to kinds. However, again, this argument does not make sense, because (77b) is (relatively) unacceptable as well. The crucial generalization is that mass terms with definite articles are in general unacceptable under kind readings (cf. 6.3.1).

6.3.5 Representative object interpretation

In section 6.2.5, we observed that (47), repeated as (78), receives a representative object interpretation, but that this interpretation is not possible for sentence (53), repeated as (79).

(78)   *Op de derde dag van onze reis naar de Azoren stonden we oog in oog met de blauwe vinvis, het grootste dier ter wereld.*

(79)   *We stonden oog in oog met blauwe vinvissen.*

This can be seen as an argument against the claim that bare plurals unambiguously refer to kinds.

In this section, we discuss whether representative object interpretations are available in sentences in which mass nouns are used. Some example sentences are given in (80) and (81).

(80)   a.   *In West-Vlaanderen fotografeerde ik hop.*
            in West-Flanders   photographed I   hop
       b.   *In West-Vlaanderen fotografeerde ik de hop.*
            in West-Flanders   photographed I   the hop.

(81)   a.   *In de duinen fotografeerde ik helmgras.*
            in the dunes photographed I   marram grass
       b.   *In de duinen fotografeerde ik het helmgras*
            in the dunes photographed I   the marram grass

These example sentences are based on sentence (82).

(82)   In Alaska, we filmed the grizzly.

Sentence (82) is borrowed from Krifka et al. (1995: 78, 87). The same example sentence is used by von Koss Torkildsen (2002), Krifka (2001: 3) and Pelletier (2004: 23), who also discuss the representative object interpretation. In (80) and (81), we substituted *photograph* for *film*, because situations in which a person films things like grass are very improbable. If representative object interpretations are possible in sentences with mass nouns at all, then this reading would be available for (80) and (81).

So, the crucial question is whether language users accept sentences (80a) and (81a) under a representative object interpretation. The intuitions of six native speakers of Dutch are presented in table 6.1. Speakers 1–5 are Flemings, speaker 6 is a Dutchman. We can conclude that there is considerable inter-speaker variation. This variation does not show any general pattern. It seems to be impossible

Table 6.1 Speakers' intuitions about representative object readings with mass nouns

sentence	speaker 1	speaker 2	speaker 3	speaker 4	speaker 5	speaker 6
(80a)	ok	ok	ok	*	*	*
(80b)	ok	*	*	ok	ok	*
(81a)	ok	ok	ok	*	*	*
(81b)	ok	*	*	ok	*	*

to draw conclusions about the semantics of bare mass terms on the basis of the availability of representative object interpretations.

6.3.6   Conclusion

The conclusion from the previous sections is that the arguments presented in 6.2 in favour of the hypothesis that bare plurals do not unambiguously refer to kinds cannot be extended in a straightforward way to bare mass terms. Yet, the most plausible interpretation of the evidence is that bare mass terms are ambiguous. If we make this assumption, we can account for the fact that there are speakers who judge sentences like (83) (cf. (8)), (84) (cf. (66a)) and (85) (cf. (70a)) unacceptable, while sentences like (86) (cf. (9b)), (87) (cf. (68a)) and (88) (cf. (71a)), are acceptable beyond any doubt.

(83)   *%#Bamboe is met uitsterven bedreigd.*

(84)   *%#Vlaamse monniken hebben bier uitgevonden.*

(85)   *%#Die man is de uitvinder van marsepein.*

(86)   *Pruimtabak bevat giftige stoffen.*

(87)   *Ik haat melk en kaas (…).*

(88)   *Hij verafschuwt de geur van kaas.*

6.4   Summary and conclusions

We have argued that bare plurals are ambiguous between a kind-referential and a non-kind-referential, variable-introducing interpretation. This accounts for the ambivalent behaviour of bare plurals. A first example of this behaviour is that the acceptability of bare plurals in kind predicate sentences is subject to inter-speaker variation. A second important observation is that bare plurals are unacceptable in the direct object position of kind predicates, but can be used in the direct object position of characterizing sentences. Thirdly, bare plurals do not necessarily refer to entities that are well-established as kinds. A last argument is that bare plurals do not receive representative object interpretations.

The idea that there are entities which are not well-established as kinds was related to the distinction between natural and nominal kind terms. Only natural kind terms can be used to refer to kinds (in the sense of chapter 3).

Much of the argumentation could not be applied in a straightforward way to bare mass terms. In section 6.2, we compared the semantics of bare plurals to definite singulars. A similar comparison could not be made for mass terms, because

mass terms with a definite article usually do not receive kind readings. Yet, the most plausible interpretation of the evidence is that bare mass terms are ambiguous. Crucially, there are speakers who do not accept kind readings of bare mass terms (in different positions, cf. (83)–(85)). At the same time, sentences in which bare mass terms receive characterizing interpretations are clearly grammatical (cf. (86)–(88)). As subtle as these observations may be, they cannot be accounted for if we assume that bare mass terms unambiguously refer to kinds.

Formal accounts of genericity, reference and the syntax–semantics interface

7.1 Introduction

In this chapter we will review two attempts to relate the semantics of nominal constituents, and more precisely their referential properties, to their syntax: that by Longobardi (1994) and that by Chierchia (1998). Furthermore, some important differences will be discussed between Longobardi's (1994) paper and his more recent work (in particular Longobardi 2001). Longobardi's and Chierchia's accounts have been (and still are) very influential in current syntactic approaches to the syntax of reference (cf. for example Cheng & Sybesma 1999; Longobardi 2005; Slabakova 2006; and Corver 2007 for recent applications of ideas from Longobardi 1994; and Chierchia 1998 to different languages and linguistic phenomena).

7.1.1 The DP hypothesis

In traditional grammar, and in early generative grammar, constituents like *the books, the new house, George* were referred to as N(oun)P(hrase)s. This label suggested that the head of the constituent is the noun, and assigns a secondary role to the determiner. In particular, according to earlier approaches, and adopting the X-bar framework, a constituent like *the discovery of the body* would have had the structure in (1) (cf. for example Jackendoff 1977; Bennis 1979; Klein 1980, 1981; and Chomsky 1986a):[1]

(1)

---
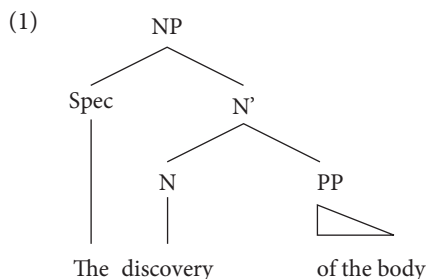
1.   See also representation (6) and the related discussion in section 7.2.2.

However, the fact that the determiner was assigned to a specifier position was problematic. For one thing, determiners are typically functional elements belonging to a closed class, while the specifier position hosts maximal projections. This can be observed in English where according to (2) the determiner and the prenominal genitive *the student's* compete for the same position:

(2)

```
              NP
           /      \
        Spec       N'
         |        /   \
         |       N     PP
         |       |     ◺
        The   discovery  of the body
     The student's
```
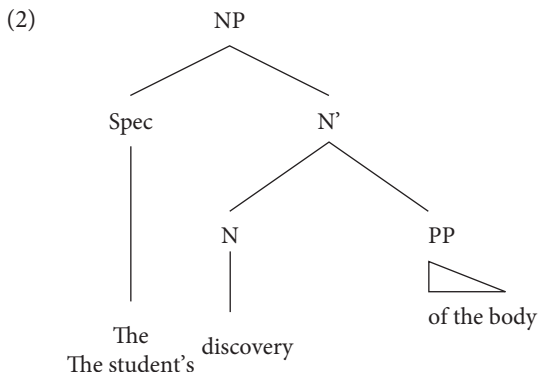
It seems implausible that a functional element like a determiner and a full phrase like *the student's* should be in the same position. This and various other arguments led to the proposal that the determiner is not a part of the projection of the noun (the noun phrase in the narrow sense) but that it is a functional head that has its own projection, the Determiner Phrase (cf. (3)). See Szabolcsi (1983) and Abney (1987) for early proposals along these lines.[2]

(3)

```
        DP
        |
        D'
       /  \
      D    NP
      |    |
     the   N'
          /  \
         N    PP
         |    ◺
     discovery  of the body
```

----
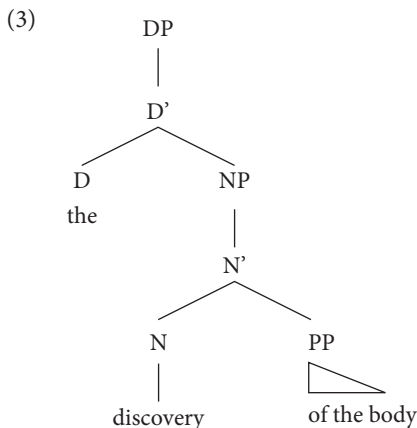
2.   De Hoop, Vanden Wyngaerd & Zwart (1990) note that the assumption that the determiner heads the noun phrase has a long tradition in Categorial Grammar (cf. Jullens 1983; Hoeksema 1985, among others).

The DP hypothesis implies that the structure of the projection of the noun is assimilated to that of the projection of the clause: in both cases a lexical projection (VP, NP) is dominated by a functional projection (IP, CP for the clause; DP for NP). In later work there was an attempt to assimilate the DP layer of the nominal projection to the CP layer of the clause (see especially Szabolczi 1994), but we will not dwell on this issue here as it is not within the scope of the discussion. Additional work on the internal syntax of the nominal projection has revealed the need to postulate a number of additional projections (see for instance Zamparelli 1995), but as this is also not relevant to our discussion we will not go into it here either. Following the recent tradition we will refer to the lexical domain of the nominal projection as NP and to the full nominal projection, including the functional domain(s), as the DP.

7.1.2   Aim and scope of this chapter

The goal of this chapter is to present the necessary background on some influential approaches to the syntax and semantics of DPs in Generative Grammar and to discuss the problems of these approaches. Against this background, an alternative approach is outlined in chapter 8.

An important part of the discussion in this chapter will be devoted to Longobardi's (1994) influential theory about the syntax and semantics of DPs. It will be shown that some of the data discussed in the previous chapters cannot easily be accounted for under the analysis proposed in Longobardi (1994). Later work by the same author (in particular Longobardi 2001) is more useful from the perspective of these data.

We will also discuss Chierchia's influential (1998) paper. Our conclusion will be that this account also raises a number of problems.

This chapter is organized as follows. Section 7.2 is devoted to Longobardi's (1994) account of the syntax and semantics of DPs. In 7.3, we will discuss some of the data from previous chapters and point out some drawbacks of Longobardi's approach. Section 7.4 will show that the approach in Longobardi (2001) is more compatible with our results. Section 7.5 is devoted to Chierchia's (1998) approach to the syntax and semantics of DPs. Section 7.6 discusses some problems of Chierchia's proposals. Section 7.7 presents some final remarks.

7.2   Longobardi (1994)

7.2.1   Introduction

In this section, I discuss the approach of Longobardi (1994). For expository reasons, I will sometimes refer to later work by the same author (Longobardi 1996,

2000, 2001 and 2005). Longobardi (1994) himself does not present Dutch examples, but in this section some of Longobardi's points will be verified by presenting Dutch example sentences.

Longobardi's (1994) paper is based on the DP-hypothesis, introduced in section 7.1.1. Longobardi's work has been important with respect to determining the role of the head D and its projection. In particular, Longobardi assumes that a nominal expression is an argument only if it is introduced by a category D. This principle is formulated in (4) (Longobardi 1994: 628). Longobardi (1994: 629) hypothesizes that (4) is valid in English as well as in Italian.

(4)   DP can be an argument (of a verb or a preposition), NP cannot

Put informally, the idea is that the lexical layer of the NP corresponds to a predicate and that the article serves to "convert" a predicate NP into an argument DP (Bernstein 2001: 542–544). So, if a nominal expression functions as a predicate, like *medico* in (5), the expression may be taken to correspond to NP.

(5)   *Gianni é medico*
      Gianni is doctor
      'Gianni is a doctor.'

Not being an argument, the NP does not need a determiner.

7.2.2   Arguing in favour of Raising from N° to D° (and the DP hypothesis)

Longobardi (1994) compares structures such as (3) to the structure in (6), in which the determiner is located in the specifier position of the NP (cf. Vandeweghe 2004: 164 for a comparable syntactic structure of noun phrases).

(6)
```
              NP
            /    \
          DP      N'
         /\        |
      Spec  D      N
```
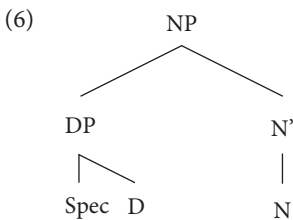
Since specifiers normally host maximal projections, one would have to assume in fact that the specifier of NP itself contains not just the D head (as in (1) and (2)) but actually a projection of D.

Longobardi (1994: 610) argues against the structure in (6). He reasons as follows:

> "if movement can be argued to apply in some language from inside NP to a position inside DP (e.g., from specifier position to specifier position or from the position of N° to that of D°), then the structure in [6] will immediately be

discarded, under any current theoretical approach, by the ban against movement to a non-c-commanding position."

He presents a number of examples of movement from inside NP to a position inside DP (cf. among others Taraldsen 1990; Delsing 1993; Embick & Noyer 2001 and Hankamer & Mikkelsen 2005 on N°-to-D° raising in Scandinavian). The best-known example is probably the one illustrated in (7).

(7) a. *Il   mio Gianni ha finalmente telefonato.*
        the my Gianni has finally   called
    b. *Il   Gianni mio ha finalmente telefonato.*
        the Gianni my has finally   called
    c. **Mio Gianni ha finalmente telefonato.*
        my Gianni has finally   called
    d. *Gianni mio ha finalmente telefonato.*
        Gianni my has finally   called

On the basis of the paradigm in (7), Longobardi (1994: 622–624) argues that articleless Italian proper names undergo raising from N° (the head position of the NP) to D° (the head position of the DP). To understand Longobardi's argument, notice first that Italian adjectives, like the possessive adjective[3] *mio*, may never occur before the D° position. This is illustrated in (8).

(8) **mio il   Gianni*
       my the Gianni

Consider again the paradigm in (7). The sentences in (7a) and (7b) show that Italian adjectives may occur in a prenominal position between the positions D° and N° (as in (7a)), or in a postnominal position (as in (7b)).[4] In (7c) and (7d), the definite article *il* is omitted. A logical prediction is that in these sentences the adjective should be able to occur in prenominal and postnominal position as well. This prediction is not borne out: Longobardi (1994: 623) writes that "although many

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3. The Italian possessive element *mio* ('my') is analysed as an adjective (cf. also Giorgi & Longobardi 1991). The reason is that while determiners cannot be multiplied (cf. (i) from Giorgi & Longobardi 1991: 155), Italian possessive elements can co-occur with determiners (as in (7a)).

(i) a. *il ciascun libro
     b. *the each book
     c. *le chaque livre

4. Giorgi & Longobardi (1991) propose that the adjective is base-generated in postnominal position and that the structure in (7a) can be derived from this position by assuming that the adjective has moved to the specifier of the NP (cf. also Longobardi 1994: 623).

varieties, especially in central and southern Italy, accept [7d], none accepts the severely ungrammatical [7c]. [T]he lack of the article forces an N-initial order."

How can the unexpected gap in the paradigm be accounted for? Longobardi's proposal is that in (7d) the proper name *Gianni* has moved from N° in order to fill in the otherwise empty D° position (by substitution[5]), thus crossing over the adjective located in the specifier position of the NP (cf. note 4). Recall that we concluded from (8) that Italian adjectives may never occur before D°. The crucial point is that this observation accounts for the fact that (7c) is ill-formed: under the assumption that the proper name has moved to D° we expect it to be impossible for the adjective to appear before the proper name in D°.

In this way, movement can be argued to apply in Italian from the N° position to D°. However, if we apply this to (6), we see that the moved constituent will end up in a position that does not c-command its trace (cf. (9)).

(9)

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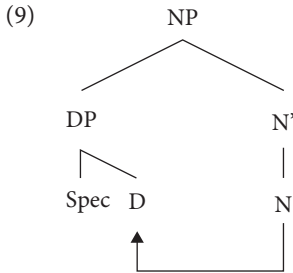
5. For head movement, two subcases with distinct properties must be defined: "substitution, which exhaustively occupies the landing position, and adjunction, which preserves the (…) content of the landing position, and (…) allows the trace of the raised N to provide the required quantificational range to the now surviving D." (Longobardi 1994: 640). In Romanian and Scandinavian the latter option is available (see Longobardi (1994: 640). Longobardi (1994: 611) refers, for instance, to Taraldsen (1990), who analyses the Norwegian paradigm in (i) in terms of raising from N° to D°. In (ib), the head N° appears to be morphologically adjoined to the article. Such cases are referred to as raising by adjunction.

(i)   a.   *hans bøker om syntaks*
           his   books on syntax
      b.   *bøkene   hans om syntaks*
           book-s-the his   on   syntax

It could be the case that in (7d) raising adjoins *Gianni* to an empty article. This is not *per se* impossible, at least not from a syntactic point of view. There is, however, no evidence that raising of nouns via adjunction to an article is possible in Italian. Longobardi assumes that this possibility does not exist in the languages under consideration.

Movement to a non-c-commanding position is standardly ruled out in the grammar. The structure in (6) can therefore be discarded by this ban against movement to a non-c-commanding position (cf. Longobardi 1994: 610). On the other hand, the DP hypothesis does not give rise to such a problem: N moves to D and does c-command its trace:

(10)

```
              DP
              |
              D'
             /  \
           D      NP
           ↑      |
           |      N'
           |      |
           |      N
           └──────┘
```
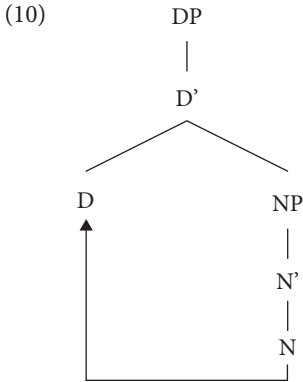
7.2.3 Semantic and syntactic restrictions on empty determiners

This section is devoted to Longobardi's treatment of 'null' (or 'empty') articles. The assumption that there are null articles is widespread. As mentioned above, many traditional and descriptive grammars of Dutch (cf. for example Haeseryn et al. 1997: 802–812 and Vandeweghe 2004: 169) assume that although bare plurals and bare mass terms have no surface determiner, they are introduced by a phonologically[6] empty determiner.

An important question is what restrictions have to be imposed on empty determiners. Haeseryn et al. (1997: 804) assume for example that null articles can be considered as the plural and mass equivalents of the indefinite article *een*. According to these authors (1997: 812), the null article cannot get a kind reading. Suppose, however, that they judged sentences like (11) to be acceptable (as do many other native speakers, cf. chapter 4).

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6. In this book, I assume that the null article is *phonologically* null. There is some terminological confusion about the term "phonologically". Longobardi (1994: 614) refers to empty determiners as "phonetically (…) null" while Chierchia (1998: 355) refers to such determiners as "phonologically null". There is a difference between both notions. Suppose that we assumed that the null article is phonetically empty. This would imply that there is no actual production of sounds. This does not exclude the possibility that underlyingly phonological information is present, which can have an influence on the phonetic output. Evidence in favour of underlying phonological information would force us to reconsider our assumption that the null article is phonologically empty.

(11)   *IJsberen   zijn bijna   uitgestorven*
        'Polar bears are almost extinct.'

It is not clear whether or not the authors would claim that *ijsberen* in (11) is in-troduced by the same empty determiner, by another empty determiner or by no determiner at all. In fact, Haeseryn et al. (1997) do not attempt to formulate an exhaustive set of restrictions on the distribution of null articles.

In generative approaches to the issue, much attention has been drawn to the question of how exactly the distribution of null articles can be described and re-stricted. In this chapter, I outline Longobardi's (1994) view on this question.

Longobardi (1994: 612–621) makes some observations about the restrictions on phonologically empty determiners in Italian. Note that the "phonologically empty determiner" is not syntactically and neither semantically empty: it is a syn-tactic object (without phonological content), for which semantic and syntactic restrictions can (or have to) be formulated. This leads to the following question: Is it possible that the D° position does not contain any (phonologically empty or non-empty) syntactic object? Longobardi does not explicitly clarify this point, but I assume that it is not possible.[7]

A first restriction on Italian empty determiners is that Italian singular count nouns may not occur in argument positions without being introduced by an

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7. This assumption is in line with recent developments in Generative Grammar, as described for example in Adger (2003), in which the assumption is made that syntactic structure is built bottom-up by application of the operation *Merge*, which has the property of joining two syntac-tic objects together to form a new syntactic object. The new syntactic object is said to contain the original syntactic objects, which stand in a sisterhood relation. The operation 'Merge' is triggered by the so-called 'checking requirement'.

How does this work for DPs? DPs are created as a result of the fact that determiners (which are syntactic objects) need to combine (or 'Merge') with an NP. This is captured by the idea that a determiner has an 'uninterpretable categorial selectional feature', which matches with a 'categorial feature' on an NP (cf. Adger 2003: 84). The assumption is made that 'uninterpretable' features must be 'checked' and that they can be 'checked' when a syntactic object X is sister to another syntactic object Y which bears a matching feature F (cf. Adger 2003: 85). So, the require-ment that uninterpretable features must be checked (the 'checking requirement') triggers Merge, which forms a new syntactic object. This new syntactic object is labelled by the features of its head, i.e., the determiner (via 'projection', cf. Adger 2003: 76). If the resulting syntactic object has no categorial selectional features to be checked, it is assumed to be a 'maximal syntactic object', i.e., an XP. Since the head of the relevant XP is a determiner, we end up with a Determiner Phrase. The moral of this is that DPs are formed as the result of uninterpretable features *on determiners*. Crucially, DPs will not be projected when there is no determiner. As a consequence, there will never be a D° position without a syntactic object in it.

overt determiner. An example sentence from Longobardi (1994: 612) is presented in (12).

(12)   *Ho incontrato *(un/il) grande amico di Maria ieri.*
       'I   met   (a/the) great   friend of Maria yesterday.'

Other types of common nouns, namely mass and plural nouns, are well-formed without an overt determiner (cf. for example (14) and (15) below). A second restriction on empty determiners, however, is that such mass or plural nouns introduced by an empty determiner apparently cannot occur in preverbal subject position. So, the sentences in (13) are ill-formed, although mass and plural nouns with empty determiners are acceptable in internal argument positions, like the direct object position in (14), and as inverted subjects of unergative predicates (cf. Longobardi 1994: 616), as illustrated in (15).[8]

(13)   a.   **Acqua viene giù   dalle colline.*
            water comes down from the hills
       b.   **In questo ufficio marocchini telefonano sempre*
            in this   office Moroccans always   call up

(14)   a.   *Ho preso acqua dalla sorgente.*
            I   took water from the spring
       b.   *In questo ufficio incontro sempre marocchini*
            in this office I meet   always Moroccans

(15)   a.   *Viene giù   acqua dalle colline.*
            comes down water from the hills
       b.   *In questo ufficio telefonano sempre marocchini*
            in this office call up   always Moroccans

Longobardi (1994: 616) accounts for the distribution of mass and plural nouns with empty determiners by assuming that the distribution of such bare nouns in Italian is subject to a 'lexical government requirement'. This means that empty determiners are only allowed in positions governed by a lexical head. Thus, DPs with null D° positions are predicted to be acceptable in direct object position, because the relevant position is governed by the verbal head (cf. also Chierchia 1998: 356). DPs with empty determiners are not allowed in preverbal subject position,

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8.   This formulation could potentially lead to confusion, because mass and plural nouns with empty determiners are acceptable as inverted subjects of unaccusative (and passive, for that matter) constructions as well. Longobardi (1994) treats subjects of unaccusative predicates on a par with direct objects, because both are internal arguments. In preverbal position bare subjects of unergatives as well as unaccusatives are predicted to be ungrammatical, because they occupy the same subject position.

because this position is assumed to be governed by a functional head. This point is developed in Longobardi (2000: 696), where he assumes that Italian 'preverbal' subjects are located in the specifier of TP (or 'IP').[9,10]

Why are postverbal bare subjects in sentences like (15) grammatical? Longobardi (1994) does not elaborate on this question. Again, Longobardi (2000) is more explicit about this. He assumes that although subjects of unaccusative or passive constructions are base-generated in another position than subjects of unergative predicates, both are base-generated VP-internally:[11]

> "The argument will be first developed for unaccusative/passive constructions, where the subject is an internal argument and is likely to have been base-generated in a postverbal slot anyway; then it will be extended to subjects of unergative predicates (…). According to current theories of phrase structure (…), noninternal arguments (i.e., subjects of unergative predicates) are still base-generated in a position lower than [Spec, I] (Koopman and Sportiche 1991), but to the left of the base position of the verb (presumably [Spec,V])."
>
> (Longobardi 2000: 692 and 697, my underlining, AO)

Longobardi argues here that Italian bare arguments in postverbal subject position (as in (15)) are grammatical, because they are located in their VP-internal base

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9.   T is defined as the category that hosts the tense feature for the whole sentence. In much recent literature on the syntax of English and Dutch, it is assumed that in these languages the subject occupies this specifier position, just like in Italian. See, for example, Zwart (2003–2004: 154–155) for Dutch and Adger (2003: 155) for English. However, see Van Craenenbroeck & Haegeman (2007) for a different view on Dutch so-called V2–sentences with an initial subject.

10.   In the more recent variants of the Generative approach it is not clear that the concept government is needed (cf. Chomsky 1991, published as chapter 2 in Chomsky 1995, and later papers). However, we assume that the relation defined as government in the earlier framework can be recast in terms of the more recent conceptual framework (cf. also chapter 8).

   Moreover, note also that being in the specifier of TP does not guarantee that T would govern the subject, even if we assume such a concept.

11.   Technically, much recent Generative syntactic literature assumes the so-called VP-shell analysis. According to this analysis the verbal phrase is a layered or shell-like structure, with a little *v* head taking a VP as its complement. I refer the reader to Adger (2003: 131–148) for more information and argumentation. In the view advocated in Adger (2003), subjects of unaccusative and passive constructions appear as the daughter of the lower shell, VP. Subjects of unergative predicates (which are Agent arguments, cf. for example Adger 2003: 140) are base-generated as the daughter of the higher shell, *v*P. However, Longobardi (2000) assumes that subjects of unergative predicates are base-generated in Spec, VP. If V moves to *v* then it will indeed govern the specifier of VP, i.e., the unergative subject.

position (a lexically governed position). This holds even for subjects of unergative predicates (cf. also note 11).[12]

There is a final interpretative restriction on Italian empty determiners: DPs with empty determiners get "indefinite, existentially quantified" readings (Longobardi 1994: 613). In sentences like (14) and (15) bare arguments must therefore be interpreted existentially. Longobardi (1994: 617) writes: "the empty D could instantiate some sort of existential operator." In later work, Longobardi abandons this assumption and accounts for the fact that such DPs receive existential readings by appealing to Diesing's (1992) *Mapping Hypothesis* (see note 12).

So, Italian empty determiners are restricted in three ways: (i) there is a selectional restriction: they are only compatible with plural and mass head nouns; (ii) there is a distributional restriction: they are subject to a lexical government constraint; and (iii) there is a semantic restriction: they receive existential interpretations (cf. Longobardi 1994: 617–618). These assumptions are summarized in (16).

(16) Italian empty determiners may occur (at S-Structure[13]) only under the following conditions:
   a. They are restricted to plural or mass nouns.
   b. They are subject to a lexical government requirement.
   c. They receive existential interpretations.

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12.   Things are more complicated than stated in the text. A first complication is that the lexical government constraint does not apply to bare nouns accompanied by a (relative, adjective, PP) modifier: modified bare nouns can freely occur in preverbal subject position (Longobardi 1994: 618). A second point is that Longobardi (2000: 691) argues that there are two derivations for verb-subject order: "[I]t could result either from base generation (…) or from leftward movement of the predicate across the (actually preverbal) subject." The latter claim leads to two interesting predictions. Diesing (1992) hypothesizes that existentially bound DPs appear inside VP, while generically bound DPs appear outside VP. In our terminology, this means that VP-internal DPs get existential readings and that VP-external DPs receive characterizing readings. This hypothesis is known as Diesing's *Mapping Hypothesis*. As a consequence, we expect Italian unmodified bare nouns in postverbal subject position to be interpreted existentially, because lexical government is violated if the subject moves out of the VP. Longobardi (2000) shows that this prediction is borne out. A second point is that we expect modified bare subjects to be ambiguous between existential and characterizing readings, because they are not subject to the lexical government condition. Longobardi (2000) shows that this prediction is borne out as well.

13.   The reason for this addition is that these restrictions are based on Longobardi's observations about surface forms. Longobardi leaves open the possibility that at the covert level of *Logical Form* empty determiners do not have to fulfil these requirements. In the Minimalist Program (Chomsky 1995) the notion of S-Structure is eliminated as a level of representation. Chomsky's idea is that linguistic structure links two levels of representation: LF and PF ('Phonetic Form'). The linguistic system generates structures, which are 'spelt out' at some point in the derivation, i.e., they receive an overt form (corresponding to PF). After this point the derivation continues

If we assume that nominal projections in argument positions are DPs and that Italian empty determiners are restricted by the conditions listed in (16), Italian proper names could potentially pose a problem. They occur without overt determiners in sentences like (17).

(17)   *Gianni mio ha finalmente telefonato.*

Gianni mio cannot be assumed to be introduced by an empty determiner, since the conditions in (16) are not fulfilled: (i) *Gianni* is not a plural or a mass noun; (ii) *Gianni mio* occurs in a lexically ungoverned position; and (iii) it does not receive an existential reading (but directly refers to an individual). It is therefore a welcome result that there is empirical evidence that Italian proper names undergo raising to D°, as shown in 7.2.2. The result of this operation is that a violation of either (4) (i.e., the principle that only DPs can be arguments) or (16) is avoided.

7.2.4   The situation in English

The hypothesis that proper names in Italian undergo raising to D° cannot be immediately extended to English proper names. This is illustrated in (18) and (19) (Longobardi 1994: 628).

(18)   a.   Old John came in.
        b.   *John old came in.

(19)   a.   the old John
        b.   *old the John

We can observe from (19) that English adjectives are similar to Italian adjectives (cf. (8)), in that they cannot occur before D°.[14] If we follow the same reasoning as

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to the level of LF. Operations after Spell-Out are covert operations. The abstract structures assumed in the Minimalist Program replace the traditional D- and S-structure levels. The spell-out point in the derivation corresponds roughly to S-structure. In the discussion of Longobardi (1994), I will use his original terminology.

14.   Patterns such as the following may constitute a possible exception:

(i)   a.   too important a decision
       b.   so important a decision

If we assume that the indefinite article occupies D°, we see that the adjective indeed precedes it. But this order is marked and requires the presence of a degree expression associated with the adjective:

(ii)   *important a decision

in 7.2.2, we can now conclude from this that *John* in (18a) must be located to the right of D°. Furthermore, sentence (18b) shows that English proper names cannot occur before the adjective. If overt raising of proper names to D° had been possible in English, we would have expected proper names to be allowed to occur in a position to the left of the adjective.

The same point can be made for Dutch, as illustrated in (20) and (21).

(20) a. *Vieze Piet kwam binnen.*
          'Filthy Piet came in.'
      b. **Piet vieze kwam binnen.*
          piet filthy came in

(21) a. *Hij is weer de oude Piet*
          he is again the old   Piet
          'Piet is back to normal again.'
      b. **Hij is weer oude de Piet*
          he is again old   the Piet

These data illustrate that in English and Dutch D° positions that do not contain an overt determiner (i) are not restricted to plural or mass nouns, (ii) are not subject to a lexical government requirement and (iii) do not necessarily receive existential interpretations. This is an indication that (16) must be somehow relaxed for English and Dutch.

In addition, Longobardi (1994: 630) points out that there are a number of other constructions in English in which DPs without overt determiners occur in positions in which they would be impossible in Italian. English bare arguments are syntactically and semantically "rather unrestricted". Longobardi (1994: 630) illustrates this by the sentences given in (22).

(22) a. *Beavers build   dams.*
          *Castori costruiscono dighe.
      b. *Dogs were   sitting on my lawn.*
          *Cani stavano seduti sul mio prato.

These sentences show that English bare plurals can be used in positions not governed by a lexical head. Furthermore, *beavers* in (22a) gets a characterizing reading (as its most natural interpretation). The literal translations of these sentences in Italian are unacceptable.

Could the English common nouns in (22) have undergone raising to D°? Longobardi (1994: 642) observes that sentences such as (23a) are acceptable as well, while (23b) is not acceptable.

(23) a. Big beavers build dams.
      b. *Beavers big build dams.

Recall that adjectives cannot occur before D° in English, as illustrated in (24) and (19b) (but see note 14).

(24)   *big the beavers.

Following the same reasoning as before, we conclude from (23) that a noun like *beavers* does not undergo (overt, cf. 8.2.7) raising from N° to D°. Dutch is similar to English in that Dutch bare arguments are rather unrestricted as well. The sentences in (25) show that bare plurals can be used in the canonical subject position, which is not lexically governed (cf. note 9).[15]

(25)   a.   *(Grote) bevers   bouwen dammen.*
             '(Big)   beavers build   dams.'

---

15.   Sentence (25b) is based on a corpus example, presented in (i). This corpus sentence from a travel report illustrates a stylistic characteristic of the construction in which an existentially interpreted noun phrase is used in this position: such sentences tend to occur especially in narrative contexts. In general, we can say that the *er*('there')-insertion construction, illustrated in (ii), is the more natural option.

(i)   *Kinderen waren aan het spelen, vrouwen zetten de   krullers bij elkaar*
       children were   playing,   women put   the curlers by each other
       in het haar en   om   te eten werden de barbecues aangezet. Het was een
       in the hair and in order to eat were   the barbecues put on it   was a
       vrolijk   gebeuren.
       cheerful event
       'Children were playing, women were putting curlers in each other's hair, and the barbecues were turned on in order to eat. It was a cheerful event.'

(ii)   *Er   waren kinderen aan het spelen.*
       'There were   children playing.'

Sentence (i) originates from http://www.reisburovangerwen.nl/reisverslagen/rvdomrep5.htm (May 2006).

   It is unlikely that any (purely) syntactic or semantic explanation will be able to account for this (stylistic) effect. A pragmatic account is needed. My hypothesis is that there are two (presumably pragmatic) factors behind this phenomenon. A first point is that while (25b) is ambiguous between a characterizing and an existential reading, (ii) only can receive an existential interpretation. This means that language users can the express existential interpretation more appropriately by (ii). This could be the reason that language users perceive (ii) as the more natural sentence under the existential reading.

   A second point has to do with patterns of information structure in (Dutch) sentences. Jansen & Wijnands (2004: 3) refer to this principle as the *theme-rheme principle*: "In Dutch, the first part of the sentence functions as theme, the rest of the sentence functions as rheme" (my translation).

> b. *Kinderen waren aan het spelen.*
>   'Children were playing.'

Furthermore, (25a) illustrates the fact that a bare plural can receive a characterizing reading in Dutch.

Longobardi (1994: 631) observes that "not only *may* English drop the article in constructions where the Romance languages may not (generics and certain proper names), but indeed it *must*" (original emphasis, AO). Two of Longobardi's (1994: 631) example sentences illustrating this claim are presented in (26).

(26)   a.   #The beavers are mammals.
      b.   #The wine is made out of grapes.

This illustrates that English requires the occurrence 'at S-Structure' of DPs without overt determiners under conditions radically different from those of Italian empty determiners.

Dutch takes an intermediate position: (27b) is unacceptable under a characterizing reading, but sentences like (27a) are subject to inter-speaker variation (cf. chapter 4).

(27)   a.   *%De bevers zijn zoogdieren*
      b.   *#De wijn wordt gemaakt van druiven.*

In section 7.2.7, I will return to Longobardi's account of the English data in (18), (22), (23) and (26). In the following two sections, I will first discuss the ill-formedness of bare count singulars and the contrast between *denotational* and *referential* interpretations. Thus we maintain the order of presentation in Longobardi (1994).

7.2.5 The ill-formedness of bare count singulars

Longobardi (1994: 632) claims that the following generalization holds "very extensively, perhaps generally, across Romance and Germanic": the only nouns that are

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So, *kinderen* is predicted to be the theme or topic in (25b). We can relate this to the following claim, which is defended by Cohen & Erteschik-Shir (2002): "[W]e show that Focus Structure determines the interpretation of [bare plurals] in English: topic bare plurals are interpreted generically [i.e., receive characterizing interpretations], focused bare plurals are interpreted existentially." Assuming that the same holds for Dutch, we expect that *kinderen* in (25b) receives a characterizing interpretation. A hypothesis about why *kinderen* can get an existential reading in narrative contexts, is that in such contexts the impact of the theme-rheme principle is greater than in other contexts. Perhaps this principle determines that the existentially interpreted *kinderen* is the topic of the sentence, even though the generalization that topic bare plurals receive characterizing interpretations predicts this to be impossible. The latter generalization could be 'overruled' by the theme-rheme principle.

allowed to appear in argument function without any overt determiner are proper names, pronouns, plurals, and singular mass nouns. Singular count nouns are never permitted in argument positions. Longobardi illustrates the latter claim by means of the Italian examples in (28).

(28)   *Ho trovato amico.
       *I   found   friend.

The same holds for Standard Dutch, as is illustrated in (29).[16]

(29)   *Ik vond vriend.

Longobardi (1994: 633) observes that not all singular nouns that allow a count interpretation are ill-formed when they are not used without an overt determiner: "[T]hey are acceptable if their intrinsic meaning and the lexical environment tolerate a mass interpretation." He presents (30a) as an example of this.[17] While in (30b) the count noun phrase *lions* quantifies over the set of individuals which have the property of being a lion, in (30a) the mass DP *lion* quantifies over the set of subparts of the mass *lion meat*.

(30)   a.   I ate lion.
       b.   I ate lions.

From this the following conclusion is drawn with respect to the interpretation of the empty determiner: "(...) [T]he empty determiner of the Romance and Germanic languages seems to impose quantification over subparts and exclude quantification over individuals whenever the head noun following it is in the singular" (Longobardi 1994: 633).

Longobardi notes that this property of the empty determiner is shared by many overt determiners, such as Italian *molto/-a/-i/-e* 'a lot of' (and the Italian partitive article "*di* +definite determiner"). Longobardi's examples of *molto/-a/-i/-e* are presented in (31).

(31)   *Ho trovato molti   amici / molta   acqua / *molto   amico*
       I   found a lot of friends / a lot of water / *a lot of friend

---

16.   In section 7.3.3, we will see that there are a few exceptions to this generalization.

17.   This is reminiscent of the observation made in chapter 6 that *kabeljauw* ('cod') is an example of a common noun which can be used as mass noun or as count noun. Notice, however, that while *kabeljauw* is probably stored in the (mental) lexicon as a mass and a count noun, *lion* (as well as Dutch *leeuw* ('lion')) is stored in the lexicon as a count noun. Only in exceptional circumstances can *lion* be used as a mass noun.

The same point can be made for the Dutch determiner *veel* ('a lot of'), as shown in (32).

(32)　*Ik vond veel vrienden / veel water / *veel vriend*

The point Longobardi wants to make here is that if determiners like those in (31) and (32) force a mass interpretation of the selected nouns, the empty determiner can be assumed to have this property as well, which accounts for the ill-formedness of sentences like (28) and (29).

7.2.6　Denotational and referential interpretations

Longobardi (1994: 634) refers to interpretations in which the D° position contains a determiner which quantifies over the set denoted by the common noun (such as the empty determiner, *a/an* or *every*) as *denotational interpretations*. Denotational interpretations of DPs can be paraphrased as in (33).

(33)　Dx, such that x belongs to the set of Ns.

Examples of DPs receiving denotational interpretations are given in (34).

(34)　a.　a table
　　　b.　every table

These DPs can be represented as in (35).

(35)　a.　$\exists$x, such that x belongs to the class of tables.
　　　b.　$\forall$x, such that x belongs to the class of tables.

We predict that such interpretations impossible for proper names, as a consequence of the fact that a proper name is not normally introduced by a determiner (but raises to D° to fill in the D° position). Proper names can be regarded as directly referring to a unique entity and do not normally correspond to sets (over which determiners can quantify). Longobardi labels such interpretations as *referential interpretations*. If we combine a proper name with a determiner such as *every*, like in (36), which is an example from Longobardi (1994: 636), the proper name can and actually must be treated as a common noun: *Mary* corresponds to a (or the) set of persons answering to the name *Mary*.

(36)　every Mary I met in my life.

The resulting DP *every Mary* receives a denotational reading.

Longobardi's distinction between referential and denotational interpretations could be misleading, because denotational DPs like *a table* and *every table* refer to things in the world as well. The crucial distinction is that proper names such as *Gianni* in (17), repeated as (37), *directly* refer to an entity, while DPs such as *a*

table and *every table* do not directly refer to an entity, but tell us something about the quantity of tables.

(37)   *Gianni mio ha finalmente telefonato.*

An important observation is that proper names occur in D° at least in some languages, but that common nouns do not normally raise to D° 'at S-Structure', even in languages like Italian. This is shown by the distribution of Italian common nouns, which is constrained by the lexical government condition on their empty determiners. Furthermore, adjectives such as *bello* can occur before the noun, as demonstrated in (38).

(38)   *Ci   sono belle   ragazze.*
       'There are   pretty girls.

Recall that we observed in (8), repeated as (39), that Italian adjectives cannot occur before D°.

(39)   **mio il Gianni*

For this reason, the plural noun *ragazze* cannot have raised to D° in (38).

Longobardi (1994: 637) accounts for the observation that proper names do, but common nouns do not, undergo raising (at S-Structure), by "stipulating" the generalization in (40).

(40)   In order to refer to a kind (…), a noun must head the N-projections
       at S-structure.

Importantly, the use of the phrase "refer to a kind" does not mean that the noun phrase refers to a kind in the sense of Krifka et al. (1995)/Carlson & Pelletier (1995) (cf. chapter 3). Longobardi's paper was written before the publication of *The Generic Book* (Carlson & Pelletier 1995). Krifka et al. (1995: 2) (i.e., the introductory chapter of *The Generic Book*) define reference to kinds as one of the two subphenomena associated with genericity:

> "The first is *reference to a kind*–a genus–as exemplified in [a]. The underlined noun phrase […] do[es] not denote (…) some particular potato or group of potatoes, but rather the kind (*Solanum tuberosum*) itself.(…)
>
> [a.]   The Irish economy became dependent upon <u>the potato</u>."

However, Longobardi (1994: 633, 634 and 636) writes:

> "Determiners are semantically understood as operators [i.e., quantificational elements] binding a variable, whose range is always the extension of the natural kind referred to by the head noun. (…) <u>[H]ead nouns in the N position always refer to kinds, whose extensions are potentially infinite sets</u> (…) The pattern of

> common nouns occurring with empty Ds can thus be accounted for by (…) what may be called a *denotational* interpretation of the DP structure: it takes the D position to host an operator and the common noun to define a range (…) for its variable. (…) *Common nouns* must always be used to refer to a kind and thus may provide a range to a (lexical or overt) determiner understood as an operator (…)."
>
> (my underlining, AO)

It is clear that Longobardi (1994) does not assume that "head nouns in the N position" always refer to a kind in the sense of Krifka et al. (1995). In his terminology, 'kinds' correspond to (potentially infinite) sets and do not (necessarily) denote "the genus" or "the kind itself".

Common noun phrases such as (34), repeated in (41), which are introduced by a quantificational determiner, get a denotational reading.

(41) a. a table
      b. every table

It is a logical consequence of the concept of denotational interpretation as defined here that the common noun stays in N° and does not raise to D° and substitute for the (quantificational) determiner (cf. note 5). So, the reader might wonder why Longobardi considers the stipulation in (40) to be necessary. The reason is probably that there is no one-to-one relation between common nouns and the denotational interpretation: a DP such as *de dodo* in (42) can receive a kind-referential interpretation (in the sense of Krifka et al.).

(42) *De dodo is uitgestorven.*
      'The dodo is extinct.'

DPs like *de dodo* in (42) directly refer to the kind corresponding to *dodo*. The kind-referential interpretation is similar to the 'referential' interpretation of proper names such as *Gianni* in (37). In the next section, it will become clear that Longobardi (1994) needs the stipulation in (40) for his account of the syntax of such interpretations.

7.2.7   The parametric proposal

In section 7.2.4, some contrasts between Italian and English were discussed. Longobardi (1994: 640–646) postulates that there is a parameter distinguishing Italian from English. This parameter will be described in this section. Indeed, according to Longobardi (1994: 640), the parameter under discussion here more generally distinguishes Romance from Germanic.

An important *desideratum* for this parameter is that it must be compatible "with the plausible assumption that both the lexical government requirement

[43a] and the default existential interpretation [43b] are universal constraints on empty determiners and not marked idiosyncrasies of Italian syntax" (cf. Longobardi 1994: 641).

(43)   a.   Empty determiners are subject to a lexical government requirement.

          b.   Empty determiners receive existential interpretations.

At first sight, the assumption that these are universal principles is rather problematic. In 7.2.4, we observed that English (and Dutch) proper names do not undergo overt raising (cf. (18), repeated as (44)), and therefore it would seem necessary to introduce them by an empty determiner. However, (44a) does not receive an existential reading and does not appear in a lexically governed position.

(44)   a.   Old John came in.

          b.   *John old came in.

Another point is that we have seen that *beavers* in (23a), repeated as (45), cannot be in D°, although it receives a characterizing reading and is not governed by a lexical head.

(45)   Big beavers build dams.

In 7.2.4, we observed that the same point can be made for Dutch.

The principles in (43) therefore do not seem to apply to English (and Dutch). How does Longobardi (1994: 641) account for this? He introduces the parameter in (46), which states that in English overt raising from N° to D° is impossible.

(46)   N raises to D ('by substitution') at S-Structure in Italian but not in English.

This leaves open the possibility that nouns raise to D° at the covert level of L(ogical) F(orm) (cf. note 13).

As a consequence, we can account for the data in (44) by assuming that the proper name raises to D° at LF and that the principles in (43) are fulfilled at LF: at LF, there is no empty determiner in D°, because this determiner has been substituted by the noun.

How does Longobardi account for English (and Dutch) common nouns like *beavers* in (45)? English common nouns cannot raise *overtly* to D°. In the first place, (40) says that in order to "refer to a kind", a noun must head the N-projections at S-Structure. This 'stipulation' prevents English as well as Italian common nouns from raising to D° at S-Structure. There is an additional assumption which states that overt raising of English nouns is impossible: (46) says that N raises to D "at S-Structure" in Italian but not in English. The combination of these assumptions accounts for the facts that in Italian (only) proper names overtly raise to D°, whereas in English neither proper nor common nouns overtly raise to D°.

This leaves open the possibility that English common nouns, just like proper names, may undergo raising to D° at LF. Hence, it is not surprising that English bare arguments do not necessarily receive existential interpretations and may occur in positions which are not governed by lexical heads, as illustrated in (45). We can now claim that (45) is well-formed as a result of the fact that *beavers* has undergone raising to D° at LF.

The fact that Italian nouns are in principle allowed to raise to D° 'at S-Structure' does not necessarily mean that raising of common nouns at LF is impossible. (46) does not forbid common nouns from raising to D° at LF in Italian. Consequently, we would expect the Italian sentences in (22), repeated as (47), to be acceptable, contrary to fact.

(47)   a.   *Castori costruiscono dighe.*
       b.   *Cani stavano seduti sul mio prato.*

According to Longobardi (1994: 642–643) there are two possible solutions for this problem: "either Italian lacks LF raising of nouns altogether or [(43) applies] at S-Structure and cannot be delayed until LF, in Italian, so that any application of LF movement would be irrelevant." In Longobardi's (1994: 643) opinion, the first solution is less plausible from a theoretical and typological point of view: "[I]t is often claimed that the canonical situation is that core movement rules are the same for all languages and that some parametrization applies to their availability before S-Structure." Therefore, Longobardi formulates a cross-linguistic condition on the level of application of (43). This condition is stated in (48).

(48)   a.   The default existential interpretation is assigned to DPs as early as possible
           (S-Structure or LF, depending on the movement parameter[18]).
       b.   The lexical government condition in (43a) is also fulfilled as early as possible.

Put informally, this condition states that, after all, S-Structure is the only level at which N°-to-D° raising can take place in Italian.

Longobardi (1994: 645) notes that a potential problem for his account is that *dogs* in (49) (cf. (22b)) is allowed to get an existential reading in a non-lexically governed position.

(49)   Dogs were sitting on my lawn.

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18.   A consequence of this is that the default interpretation is in fact not necessarily assigned as early as possible: if this had been the case, we would expect the assignment of existential interpretations to be applied at S-Structure in English as well. As a consequence (45) would be predicted to get an existential interpretation. So, the existential interpretation is, after all, not assigned as early as possible, but it simply depends on the movement parameter at which level the default existential reading is assigned.

The problem is that the fact that *dogs* is allowed to appear in this position suggests that the noun has raised to D° (at LF), while the fact that the sentence gets an existential reading shows that there is an empty determiner in D°. Longobardi discusses the question of which mechanisms could account for such sentences. One of his suggestions is that the default existential reading (cf. (48a)) optionally applies at S-Structure in English, while lexical government (cf. (48b)) may continue to be evaluated at LF. Thus, (49) gets an existential reading as a result of the presence of an empty determiner at S-Structure and is well-formed as a result of LF raising to D°.

Note, however, that the assumption that the default existential reading *optionally* applies at S-Structure contradicts the claim that "the default existential interpretation is assigned to DPs as early as possible (S-Structure or LF, depending on the movement parameter)" (Longobardi 1994: 643, cf. (48a)). This contradiction can be resolved by replacing (48a) with (50) (cf. also note 18).

> (50)   The default existential interpretation is assigned to DPs at the following levels:
>   a.   at S-Structure in Italian
>   b.   at S-Structure or at LF in English

7.2.8   'Generics' and the concept of expletive article

In the previous section, we discussed the fact that Longobardi assumes that *big beavers* in (51) does not violate the lexical government condition since *beavers* raises to D° at LF.

> (51)   Big beavers build dams.

Recall that Longobardi proposes that an existential reading can optionally be assigned to the empty determiner at S-Structure. This accounts for the fact that bare plurals like *dogs* in (49) get an existential reading. *Big beavers* in (51) gets a kind-referential reading (as its most natural interpretation). This shows that the existential interpretation is *optionally* assigned to the DP (at S-Structure). In cases like (51), it is not actually assigned to the DP.

Longobardi assumes that raising to D°, which prevents D° from being empty at LF, is an operation that leads to a reading in which the DP directly refers to an entity. This can be a single individual object (if the noun is a proper name) or a kind (if the noun is a common noun).

Such "referential" readings of common nouns, in which the DP directly refers to a kind, correspond to the concept of 'reference to kinds' as understood in chapter 3 of this study. Longobardi (1994: 647) explicitly states that under such "referential" readings "bare plurals (…) designate the whole kind referred to by the head noun." In chapters 3 and 6, we argued that bare plurals in sentences like (52) unambiguously refer to a kind.

(52)   Dodos are extinct.

A representation of (52) is given in (53) (cf. chapter 3).

(53)   **extinct($\uparrow$dodo)**

Longobardi (1994: 649) adds, however, that "in addition to capturing the essentially referential function of many generics, [this analysis] does not exclude another type of generic interpretation, the *quantificational* one, along the lines of a distinction identified by Gerstner & Krifka (1987) and Wilkinson (1988)."[19] Longobardi assumes that kind-referential DPs can provide the quantificational range to the generic operator GEN. This means that in his approach kind readings of DPs can be combined with characterizing readings of sentences as a whole (cf. chapter 3, where we saw how such readings can be represented). Thus, he accounts for the "quantificational generic" interpretation, i.e., the characterizing interpretation.

However, in the previous chapter, arguments were presented in favour of the claim that bare arguments are ambiguous in characterizing sentences (cf. (51) and (54)): they get (i) an interpretation in which they refer to a kind (cf. (55a)) and (ii) an interpretation in which they do not refer to a kind, but introduce a variable which is then bound by GEN (cf. (55b)).

(54)   *Tijgers zijn gevaarlijk.*
         'Tigers are dangerous.'

(55)   a.   GEN[x] [C($\uparrow$tijger)(x)] [gevaarlijk(x)]
               'In most cases in which x is an object of the kind corresponding to *tijger*,
               x is dangerous.'
         b.   GEN[x] [**tijger**(x)] [**gevaarlijk**(x)]
               'In most cases in which x is a tiger, x is dangerous.'

In the reading represented in (55b), the bare argument does not refer to a kind. It is not clear whether and how the latter interpretation can be distinguished in Longobardi's (1994) approach. In his proposal, bare arguments can be introduced by the empty determiner, which corresponds to a purely existential reading, or they can undergo raising to D°, which leads to a kind-referential reading (which can be *combined with* a 'quantificational' reading). Another possibility does not seem to exist. If this is correct, the reading in (55b) cannot be accounted for in Longobardi's framework.

In the previous sections, we have concluded that Italian bare common nouns do not undergo raising to D° and, as a result, receive existential readings. To receive

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19.   Gerstner & Krifka (1987) (later published as Gerstner-Link & Krifka 1993) and Wilkinson (1988) are predecessors of the treatment of genericity presented in Carlson & Pelletier (1995) and adopted in this study.

kind-referential readings, Italian common nouns have to be introduced by definite articles. In (56), some example sentences from Chierchia (1998: 342) are given.

(56)   a.   *Il   dodo é estinto.*
            'The dodo is extinct.'
       b.   *I   cani sono rari*
            'The dogs are   rare.'

The definite article in sentences like (56) does not seem to have semantic content of its own. Therefore, Longobardi refers to such articles as *expletive* articles. He concludes that raising from N° to D° and the expletive article are two formal devices to prevent a D° from being empty and to achieve a (kind-)referential reading. Longobardi (1994) formalizes this by making use of the notion of CHAIN (cf. Chomsky 1986b): raising from N° to D° or the insertion of an expletive article are assumed to be two formal devices to establish links between D° and N°, referred to in the literature as CHAINS.[20]

Expletive articles are also available in English. This is illustrated in (57), in which the definite article has the same function as the articles in the Italian sentences in (56).

(57)   The lion has four legs.

The omission of the articles in (56a) and (57) would lead to ungrammaticality. Longobardi (1994: 650) relates this to the fact that "if a (…) noun is in the singular, the nonmass interpretation can never be expressed through the empty determiner; therefore, there are independent reasons to expect singular generics to be necessarily introduced by an article (…) whenever they express the count reading" (cf. section 7.2.5 for discussion).

For Italian proper names, both strategies to achieve a referential reading, viz. the use of an expletive article (as in (58a)) and raising from N° to D° (as in (58b)), are available.

(58)   a.   *Il Gianni ha finalmente telefonato.*
            the Gianni has finally   called.
       b.   *Gianni ha finalmente telefonato.*
            Gianni has finally   called.

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20.   The concept of CHAINS was more prominent in the later stages of the Principles and Parameters framework, in which it often was appealed to in representational approaches. Given the derivational approach in more recent minimalist approaches, the concept of CHAIN is less prominent. Hence, in his Minimalist-inspired later work (i.e., Longobardi 2001), Longobardi does not make use of this notion.

A problem for this account is that English does not tolerate the use of expletive articles with plural and mass common nouns and with proper names. This is illustrated in (59).

(59) a.   (#The) lions have four legs.[21]
      b.   (#The) milk is white.
      c.   (#The) John has called.

Longobardi (1994: 653) accounts for this by making the assumption in (60).

(60)   Expletive articles are licensed only as a last resort.

'As a last resort' means: if no synonymous raising derivation is available. Recall that the nouns in (59) can undergo raising (at LF) in English, which leads to a 'referential' interpretation. As a consequence, the use of an expletive article in (59) is ruled out by (60).

Longobardi recognizes that although the principle in (60) seems to be correct for English, it can hardly be regarded as universal. The sentences in (58) illustrate that Italian proper names can undergo raising but they can also be preceded by an expletive article. Furthermore, some German example sentences (Longobardi 1994: 653) incompatible with (60) are given in (61).

(61) a.   *(Die) Biber   bauen Dämme*
           the   beavers build dams
           'Beavers build dams.'
      b.   *(Die) Milch ist weiß.*
           the   milk is white
           'Milk is white.'
      c.   *(Der) Hans ist   angekommen.*
           the   Hans has arrived
           'Hans has arrived.'

The use of expletive articles in these sentences is acceptable "in many varieties of German".

A similar point can be made for Dutch. In chapter 4, we saw that there are speakers of Dutch who find the use of definite (i.e., expletive) articles in sentences like (62a) acceptable. Furthermore, there are speakers who consider the forms

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21.   Definite articles are better with nationality names. A corpus example is presented in (i). I refer the reader to section 7.3.5 for a discussion of differences in acceptability related to lexical semantic classes.

(i)   The Italians are extremely intelligent and intuitive, and they're almost always willing to help someone who makes an effort.

The sentence originates from www.initaly.com (August 2006).

with as well as the forms without definite articles to be acceptable in sentences like (62b) (cf. chapter 6). A point that was not discussed in the previous chapters is that in some (Brabantish) dialects of Dutch as well as in the colloquial substandard register of Belgian Dutch, definite articles can be used with proper names (cf. (62c)). There are dialect speakers who accept both of the forms in (62c) and assign them the same interpretation (Jeroen Van Craenenbroeck p.c.).

(62)   a.   *(%De) bevers   bouwen dammen.*
            the   beavers build   dams

        b. *%(%De) dopheide is in dit gebied bijna uitgestorven.*
            the   heather   is in this area   nearly extinct
           'In this area, heather is nearly extinct.'

        c. *(%De) Frank is   aangekomen*
           the   Frank has arrived

Longobardi (1994: 653) concludes that it cannot be avoided to postulate "some independent parametrization or complications of [60] in order to account for the distribution of expletive articles in various Germanic languages and dialects." More concretely, Longobardi (1994: 654) claims that (60) should be replaced by a principle of Universal Grammar like the one in (63).

(63)   Expletive articles are licensed only if they express grammatical features, or as a last resort.

On the basis of this assumption, Longobardi argues that the peculiarity that English displays in limiting the use of expletive articles, as illustrated in (59), correlates with the lack of morphological expression of gender and number on the article. As a consequence of the latter fact, English (expletive) articles are not licensed by the need to spell out morphological content (e.g., gender or number features on the article).

7.2.9   The referentiality feature

In an appendix to his article, Longobardi (1994: 659–662) presents some proposals to implement the idea that raising from N° to D° and the use of an expletive article are two formal devices to achieve referential readings in "some version of a "minimalist" program of the sort sketched by Chomsky" (Longobardi 1994: 659). He assumes that D° positions are universally generated with an abstract referentiality feature, which has two values: –R(eferential) and +R(eferential).

The feature value +R can be licensed ("checked") via (i) raising of a proper name (or another type of object-referring expression[22]) to D°; or (ii) insertion of

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22.   Longobardi (1994: 659) assumes that pronouns are a second type of object-referring expressions. In our presentation of Longobardi (1994) the syntax and semantics of pronouns are not discussed.

an expletive article selecting a proper name. Recall from the previous section that Longobardi formalizes this by making use of the notion of CHAIN (cf. Chomsky 1986b): raising from N° to D° and insertion of an expletive article are two formal devices to establish a link between D° and N°, referred to in the literature as a CHAIN. So, +R is licensed if the D° position which is generated with the feature +R is in a CHAIN containing an object-referring expression.

Longobardi assumes that the value –R on D° positions is licensed via (i) raising of a common noun to D°; or (ii) insertion of an expletive article selecting a common noun. So, –R is licensed if the D° position which is generated with the feature –R is in a CHAIN containing a common noun.

To summarize, Longobardi makes the assumption that the D° position that introduces common nouns possesses the feature value –R(eferential). This suggests that common nouns cannot receive "referential" interpretations, which does not seem to be in agreement with the fact that DPs with common nouns can receive kind-referential readings (in sentences like (52), (54) and (56)). From a (semantic) perspective, it would have been much more plausible if raising of common nouns and the insertion of expletive articles with common nouns had been devices licensing the value +R.

7.2.10   Summary

Longobardi (1994) presents a cross-linguistic account of the syntax and semantics of empty determiners. Syntactically, empty determiners (i) select plural or mass nouns and (ii) are licensed only in lexically governed positions. Semantically, empty determiners (iii) are interpreted as existential quantifiers. Yet, Italian proper names, which are not necessarily introduced by overt determiners, are (i) not plural or mass, (ii) can be used in positions which are not governed by lexical heads and (iii) do not receive existential readings. Longobardi accounts for this by arguing that Italian proper names undergo raising from N° to D°.

The same account can, however, not be applied to English (and Dutch) nouns. Longobardi (1994) shows that English proper names and common nouns do not overtly raise to D° and at the same time do not respect the restrictions on empty determiners. Longobardi's proposal is that English has raising from N° to D° at the covert level of LF.

Semantically, raising and the insertion of an expletive article are interpreted as devices to express interpretations in which common nouns and proper names refer to the entity which corresponds to the noun. In an appendix, Longobardi (1994) accounts for this by assuming a system with a feature ±Referential. Oddly, Longobardi makes the assumption that the D° position which introduces common nouns (necessarily) possesses the feature value –R. This suggests that DPs with common nouns cannot get referential readings, which is not the desired result (cf. section 7.4 for a related discussion of Longobardi 2001).

7.3 Problems for Longobardi's (1994) approach

Applying Longobardi's analysis to some of the Dutch (and English) data presented in the previous chapters leads to a number of problems, which we will discuss in the following sections. As we will see, many of the problems that arise are due to the fact that there is speaker variation, so that no absolute statements can be formulated as to what is and what is not grammatical. Longobardi's system, or a reformulation of it, does not seem flexible enough to cope with the diverse data that we have come across for Dutch.

7.3.1 Raising at LF

In sections 7.2.7 and 7.2.8, we discussed how Longobardi (1994) accounts for the English data in (22), repeated as (64), and the Dutch data in (25), repeated as (65).

(64) a.   Beavers build dams.
      b.   Dogs were sitting on my lawn.

(65) a.   *(Grote) bevers bouwen dammen.*
      b.   *Kinderen waren aan het spelen.*

Such data are problematic for the assumption that the empty determiner receives an existential reading and cannot be used in positions not governed by a lexical head (such as the preverbal subject position in English and Dutch; cf. note 9). Longobardi accounts for these data by assuming that in languages such as English and Dutch nouns can undergo raising from N° to D° at the covert level of LF (cf. 7.2.7). The same analysis is applied to sentences such as (18a) and (20a), repeated as (66) and (67), in which proper names are used.

(66)   Old John came in.

(67)   *Vieze Piet kwam binnen.*

  Longobardi's description of English and Dutch is based on Italian data: there are plausible arguments that Italian proper names undergo raising (and substitution) into D°, thus avoiding the restrictions on empty determiners. The assumption that in English, Dutch (and other Germanic languages) there is LF-raising in (64)–(67) is made on theoretical grounds:

> "I hypothesize the existence of a parameter distinguishing Italian from English (and more generally Romance from Germanic) (…) displaying the following theoretically desirable properties: it will have a form similar to that of other well-established syntactic parameters, (…) and it will be compatible with the plausible assumption that both the lexical government requirement and the default existential interpretation are universal constraints on empty determiners and not

> marked idiosyncrasies of Italian syntax. The following parameter can now be proposed: (…) some languages perform only in LF the same movement operations that other languages already perform in [overt syntax]."
>
> (Longobardi 1994: 640–641, my underlining, AO)

A problem for such an approach is that there is no (substantial) empirical or other evidence that Dutch or English has *overt* raising from N° to D° triggered by the constraints suggested by Longobardi (1994). If there had been such evidence, it would have been reasonable to assume that, under some well-defined conditions, N°-to-D° raising can take place at LF.

A logical question is: why should we not assume that Germanic languages have empty determiners with other semantic and syntactic restrictions than Italian? Apart from the existential empty determiner, there could be other empty determiners, which would correspond to non-existential readings and could occur in positions which are not available to the Italian/Romance empty determiner. In that case, we would do not have to stipulate raising from N° to D° at LF.

7.3.2   Ambiguous bare arguments

In chapter 6, we argued extensively that bare arguments are ambiguous between a kind-referential interpretation (represented in (55a), repeated as (69a)) and a reading in which they introduce a variable without referring to a kind (represented in (55b), repeated as (69b)). The representations in (69) correspond to (68).

(68)   *Tijgers zijn gevaarlijk.*

(69)   a.   GEN[x] [C(↑**tijger**)(x)] [**gevaarlijk**(x)]
       b.   GEN[x] [**tijger**(x)] [**gevaarlijk**(x)]

It is not clear how these two interpretations can be derived in Longobardi's approach. Longobardi describes two derivations for bare arguments: they can be introduced by an empty determiner, which unambiguously leads to an existential interpretation, or they can undergo raising (at LF), which corresponds to a reading in which they refer to a kind.

Recall that Longobardi (1994: 649) assumes that *kind-referential* DPs can provide the quantificational range to the generic operator GEN, which leads to "another type of generic interpretation, the *quantificational* one". This reading (roughly) corresponds to (69a). However, it is not clear whether and how (69b) can be derived in Longobardi's system.

7.3.3   The ill-formedness of bare singular counts

Longobardi (1994: 632) claims that the following generalization holds very extensively, perhaps generally, across Romance and Germanic languages: Singular count

nouns without overt determiners are always excluded. He writes: "Why should this be so? (…) [T]he empty determiner of the Romance and Germanic languages seems to impose quantification over subparts and exclude quantification over individuals whenever the head noun following it is in the singular" (Longobardi 1994: 633, my underlining, AO). Longobardi thus hypothesizes that the ill-formedness of singular count nouns without overt determiners is related to the quantificational properties of the empty determiner (cf. section 7.2.5).

Longobardi correctly leaves open the possibility that his generalization does not hold generally (see above). I will discuss two points illustrating this. A first point is that in Dutch and English (and in other (Germanic) languages as well; cf. Hoeksema 2000), there are a number of exceptions to the observation that singular counts cannot occur without overt determiners. A first exception is the intriguing construction (also found in other continental Germanic languages, English and a number of Romance languages) in which singular count nouns without any determiner are coordinated, as in Dutch (70) and English (71) (cf. Heycock & Zamparelli 2003 for a discussion and an account of sentences such as (71)).

(70) Kat *en hond waren even   vies.*[23]
      'Cat and dog   were   equally filthy.'

(71) Because cat and dog are subtypes of pet, they can occur as well.[24]

A second construction is the *feit is dat* ('fact is that')-construction, discussed in Hoeksema (2000). There is a class of nouns which can occur without an overt determiner in topicalized position. Hoeksema concludes that in most corpus examples, the noun phrases are predicates, but he notes that the construction extends to argument positions: in (72) and (73), the topicalized bare singular is the direct object of the sentence (Hoeksema 2000: 121).

(72) *Hoogste prioriteit hebben het Damsterdiep tussen   de Oostersingel en*
      highest   priority   have   the Damsterdiep between the Oostersingel and
      Steentilstraat (…) en   het Boterdiep.[25]
      Steentilstraat   and the Boterdiep
      'The Damsterdiep between the Oostersingel and the Steentilstraat (…) and the
      Boterdiep have the highest priority.'

(73) Highest priority has the analysis of existing multinational approved vehicles (…).[26]

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23. The sentence originates from www.ltg.ed.ac.uk/~ht/sgml97.html (July 2006).

24. The sentence originates from www.ltg.ed.ac.uk/~ht/sgml97.html (July 2006).

25. The sentence originates from *De Groninger Gezinsbode,* 21–6–2000, cf. Hoeksema (2000: 121).

26. The sentence originates from www.modtrain.com/operators.html (July 2006).

Furthermore, Hoeksema refers to van der Horst & van der Horst (1999: 220), who present examples where the bare singular is the subject of the sentence.

A second point is that in the Low Saxon dialect of Dutch spoken in (a part of) the province of Groningen singular counts can occur without an article. Non-neutral words are not normally introduced by a definite article. An example from ter Laan (1953) can be found in (74a). Neutral words are normally introduced by definite articles, but in weak pronunciation the form without an article is possible as well. An example is given in (74b) (ter Laan 1953).

(74)   a.   *Man het geliek.*
             man has right
             'The/That man is right.'
       b.   *Peerd löpt   in 't   laand.*
             horse walks in the land
             'The horse is walking in the field.'

These sentences unambiguously receive a definite/specific reading. If we assume that argument noun phrases are DPs, a logical conclusion is that *man* in (74a) and *peerd* in (74b) are introduced by empty determiners, which correspond to definite/specific interpretations.

It is not clear whether and how Longobardi's (1994) framework can account for these exceptions to his generalization. However, I would not exclude the possibility that explanations are possible for (some of) the exceptions. One could, for example, assume that in cases like (70)–(74), the noun undergoes LF raising from N° to D°. An argument in favour of such a claim could be that the relevant noun phrases are ill-formed under an existential reading. This is illustrated in (75).

(75)   a.   **Er   vechten kat en   hond.*
             there fight   cat and dog
       b.   **Er   heeft hoogste prioriteit het Damsterdiep.*
             there has   highest   priority   the damsterdiep.
       c.   **Der   het   man west.*
             there has man been

In Longobardi's system, this suggests that the relevant DPs cannot be introduced by empty determiners, but necessarily undergo raising.[27] A drawback of such an analysis is that there is no (substantial) empirical evidence that Dutch and English have this type of raising (cf. 7.3.1).

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27.   Note, however, that Heycock & Zamparelli (2003) argue against exactly this approach and propose that the coordinated singular NPs raise to the specifier of DP and that the presence of an element in [Spec,DP] licenses an empty D° position. So, the claim that an empty determiner necessarily correspond to an *existential* interpretation is in conflict with Heycock & Zamparelli's (2003) account. See chapter 9 for more discussion.

Although the difficulties for Longobardi's description posed by sentences such as (70–74) may not be insurmountable, there is still another (more serious) problem for his account. Longobardi claims that the ill-formedness of singular count nouns without overt determiners can be accounted for by the quantificational properties of Romance and Germanic empty determiners. However, this does not explain that sentences like (76b) are unacceptable as well.

(76) a. *De dodo is uitgestorven.*
          'The dodo is extinct.'
      b. **Dodo is uitgestorven.*
          dodo is extinct

To understand this, note that the minimally different sentence in (76a) has the following semantics (cf. chapter 3 and 7.2.8): the predicate *uitgestorven zijn* corresponds to a property of kinds, which is attributed to the kind denoted by the subject DP *de dodo*. Crucially, sentences such as (76) do not express quantification at all. The fact that (76b) is unacceptable therefore can not be accounted for by Longobardi's (1994: 633) assumption that "the empty determiner seems to (…) exclude quantification over individuals whenever the head noun (…) is in the singular".

Longobardi's account of the unacceptability of bare singular counts in terms of the semantics of empty determiners is difficult to maintain. A purely syntactic account is to be preferred. This conclusion is in line with Adger (2003: 259), who writes:

"(…) it is impossible to have a null determiner with singular nouns like *letter*:

(…) *I have sent 0 letter to Environmental Health.

[This sentence] is accounted for because *send* (…) selects a DP, but there is no null D which combines with a singular noun in English."[28]

In chapter 8, I will propose an alternative account which is in line with Adger's description. Crucially, Adger's assumption that there is no empty determiner which combines with count singular nouns in English leaves open the possibility that the Groningen dialect has a definite/specific empty determiner, which does combine with singular count nouns.

7.3.4 Lexical government

Longobardi assumes that empty determiners are subject to a lexical government requirement: empty determiners are only allowed in positions governed by

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28. Adger implements this in terms of 'categorial selectional features'. Such features determine the category of the elements which will be able to Merge with the relevant lexical item. In this way, the ill-formedness of bare singular counts is stated as a syntactic matter.

lexical heads. Longobardi uses this condition to explain subject-object asymmetries in the licensing of empty determiners in Italian.

In chapter 6, we discussed a Dutch subject-object asymmetry. Some relevant example sentences are presented in (77).

(77)   a. *%Dodo's zijn uitgestorven.*
         'Dodos are extinct.'
   b. *#De Hollanders hebben dodo's uitgeroeid.*
       the Dutch   have   dodos exterminated

An English sentence from Krifka et al. (1995: 71) similar to (77b) can be found in (78).

(78)   ?The French settlers in Mauritius exterminated dodos.

This sentence is presented with the original grammaticality judgement.

These data show that Dutch kind-referential bare noun phrases are (semantically) ill-formed in direct object position, while a percentage of speakers consider them acceptable in subject position. At first sight, this is not in agreement with the lexical government condition. Note, however, that this simple conclusion does not do justice to Longobardi (1994). According to Longobardi, nouns can undergo raising at LF. Consequently, *dodo's* in (77a) has possibly raised from N° to D° at LF, thus avoiding a violation of the lexical government constraint.

A proposal along these lines does not explain, however, why (77b) and (78) are (relatively) unacceptable. This question remains unanswered. The reader might wonder whether the following proposal could account for this issue. Suppose we follow Longobardi in assuming that the direct object position is lexically governed. This means that *dodo's* in (77b) can be introduced by an empty determiner and that we predict (77b) to be acceptable under an existential reading of the direct object. Let us furthermore assume that LF-raising is constrained by some principle of economy. This is exactly what is proposed by Longobardi (2005: 36), who assumes the following constraint: "Move only if it is a Last Resort for convergence". As a consequence of the fact that *dodo's* in (77b) occurs in a lexically governed position, raising is not a last resort for convergence. So, we predict raising to be impossible in (77b). This accounts for the ill-formedness of (77b) under an ordinary kind reading of the direct object. Note that the sentence is predicted to be well-formed under an existential reading. This prediction is borne out: in chapter 6 we saw that sentences like (77b) are actually acceptable under an existential (taxonomic) interpretation.

Unfortunately, such an analysis does not work. Under this account, we have to assume that the economy principle which predicts LF-raising to be impossible in (77b) also predicts that LF-raising necessarily takes place in (77a). In subject

position, LF-raising is necessary to achieve a grammatical output. If LF-raising does not apply in this position, we would end up with an empty determiner which is not lexically governed. As a consequence, we predict that a subject DP without an overt determiner unambiguously refers to a kind. This prediction is not borne out: subject DPs without overt determiners can also receive an existential reading (as well as an interpretation in which the variable introduced by the bare plural is bound by GEN, cf. chapter 6 and section 7.3.2). Example sentences were presented in (22b) and (25b), repeated below as (79) and (80).

(79) Dogs were sitting on my lawn.

(80) *Kinderen waren aan het spelen.*

So, an analysis of the data in terms of raising does not make the correct predictions.[29]

We have seen that an alternative analysis assuming that kind-referential bare noun phrases such as *dodo's* in (77a) are introduced by an empty determiner runs into problems as well: the lexical government constraint states that an empty determiner must be governed by a lexical head. Under this approach we cannot account for the fact that (77a) is considered acceptable by a number of speakers, while (77b) is semantically ill-formed. Our conclusion must be that Longobardi's approach cannot account for the English and Dutch data presented here.[30]

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29.   An additional problem is that the proposal predicts that raising from N° to D° (cf. Longobardi 2005: 36) as well as the use of an expletive article (cf. 7.2.8 and Longobardi 1994: 653) is subject to last resort constraints. This seems to be a rather complicated situation: if two competing phenomena are restricted by similar economy constraints, deriving a well-formed output may be problematic (unless a ranking of constraints is proposed).

30.   An alternative to Longobardi's account of the asymmetry between the direct object position and the preverbal subject position in languages like Italian is suggested by Déprez (2000). Her analysis is based on a suggestion made by Chomsky (1995). According to Chomsky (1995), subjects have to be in preverbal position in order to be able to check the strong D-feature on the functional category T(ense). This is a reformulation of the so-called Extended Projection Principle (EPP). The D-feature on T is sometimes referred to as *EPP-feature*. Déprez assumes that this EPP-feature can be checked by DPs with a D° position bearing a categorial D feature. She proposes that in Romance bare arguments, the DP projection is missing altogether. As a consequence, Romance bare arguments lack an appropriate D feature. This means that they cannot check the EPP-feature and fail to occur in pre-verbal subject positions. Déprez offers two suggestions to account for the fact that in English, Dutch and other languages bare arguments may appear in preverbal position. A first option is that in languages such as English EPP-checking involves an N feature. As a result, NPs can check the EPP-feature. Note that this implies that in such languages bare arguments are NPs without DPs on top, just like in Romance languages. A second suggestion is that in languages such as English, bare arguments do project a DP, with a phonologically empty null D° position bearing a categorial D-feature.

Linguistic reality is more complex than the lexical government constraint predicts.[31]

7.3.5   The licensing of expletive articles

This section discusses Longobardi's account of the differences between English and German in the acceptability of expletive articles.

In section 7.2.8 we discussed the fact that English does not tolerate the use of expletive articles with plural nouns like *lions*, with mass nouns like *milk* and with proper names. This was illustrated in (59), repeated as (81).

(81)   a.   (#The) lions have four legs.
       b.   (#The) milk is white.
       c.   (#The) John has called.

Longobardi (1994: 653) observes that the use of expletive articles in sentences like those in (82) (cf. (61a) and (61b) for translations) is acceptable "in many varieties of German".

(82)   a.   *Die Biber bauen Dämme*
       b.   *Die Milch ist weiß.*

Recall that the Dutch sentence in (83) (cf. (62a)) is accepted by a number of speakers of Dutch.

(83)   %*De bevers bouwen dammen.*

Longobardi (1994: 654) argues that the peculiarity that English displays in limiting the use of expletive articles, as illustrated in (81), correlates "with the lack of morphological expression of gender and number on the article". He accounts for the data in (81) and (82) by assuming the principle in (63), repeated as (84).

(84)   Expletive articles are licensed only if they express grammatical features,
       or as a last resort.

This assumption leads to a number of problems.

A first problem is that the acceptability of sentences like the German ones in (82) and the Dutch one in (83) is subject to variation among speakers. Longobardi's

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The alternatives proposed by Déprez cannot account for the fact that English and Dutch kind-referential bare arguments are restricted in that they cannot occur in the direct object position (cf. (77) and (78)). Chapter 8 outlines an approach which accounts for these data.

31.   The fact that dialects of Dutch display even more substantial variation with respect to sentences in which bare plurals occur in different syntactic positions (cf. chapter 5) reinforces this point.

proposal can therefore only be maintained only if we can argue that solely in the varieties accepting the sentences in (82) and (83), the articles are last resorts or express grammatical features.

A second problem arises when comparing (83) to (85).[32]

(85)   a.   *#De melk is wit.*
           the milk is white
     b.   *#Het bier is geel.*
           the beer is yellow

In (83) as well as in (85), expletive articles cannot be assumed to be licensed as a last resort, since in both cases bare forms are acceptable as well. Furthermore, notice that mass nouns can take two forms of the definite article: the non-neuter article *de* in (85a) and the neuter *het* in (85b). The Dutch plural definite article *de* has only one form, which is illustrated in (83). There is therefore no reason to assume that the article in (83) is licensed by the need to spell out grammatical features and that the articles in (85) are not licensed by the need to spell out such features.

Yet, we found that while some authors consider sentences such as (83) to be acceptable (cf. chapter 4), there are (to my knowledge) no publications in which sentences such as (85) are deemed acceptable. Devos, De Muynck & Van Herreweghe (1991: 43–44), for example, consider sentence (86) to be well-formed, but they write that definite articles cannot be used with mass nouns under the relevant interpretation.

(86)   *%De Amerikanen houden van glamour*
      the Americans love   of   glamour.
      'Americans love glamour.'

Furthermore, in chapter 5 we found that there are only two local varieties in which sentences like (85) are relatively acceptable. At the same time there are 18 speakers of different local varieties who find sentences similar to (83) and (86) acceptable. Longobardi's approach does not predict a contrast between sentences like (85) and sentences like (83) and (86).

A third problem is that the questionnaire study presented in chapter 5 showed that differences between lexical semantic classes, for example nationality names and animal names, play an important role in the acceptability of characterizing sentences. This point is illustrated in (87) and (88).

(87)   a.   *De mol is blind.*
           'The mole is blind.'

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32.   I refer the reader to chapter 6, section 6.3.1, for a discussion of some example sentences similar to those in (85) in which mass DPs are acceptable with definite articles.

b. *De Belg   is erg   beleefd.*
'The Belgian is very polite.'

(88) a. *De mollen zijn blind.*
the moles are blind
'Moles are blind.'

b. *De Belgen   zijn erg   beleefd.*
the Belgians are very polite
'Belgians are very polite.'

We found that there are a number of varieties in which characterizing sentences such as (87b), where a nationality name is used, are more acceptable than sentences like (87a), in which an animal name is used. Another observation illustrating the same point is that there are a number of varieties in which (88b) is more acceptable than (88a).

Longobardi's approach cannot account for the fact that in some dialects expletive articles are "licensed" in (87b) and (88b), but not in (87a) and (88a). Recall that Longobardi (1994) assumes that expletive articles are licensed if they express grammatical features (e.g., gender or number features) or as a last resort. In the latter option approach, we cannot account for the difference between the a-sentence and the b-sentence in (87), since characterizing sentences like (89) are severely ungrammatical in any variety of Dutch.

(89) a. *#Mol   is blind.*
mole is blind
b. *#Belg   is erg   beleefd.*
Belgian is very polite

Even in the Groningen dialect, in which bare singular counts are well-formed (cf. 7.3.3), they get definite/specific readings and are semantically ill-formed in characterizing sentences. An expletive article is therefore predicted to be a last resort in sentences like (87b) as well as (87a). This prediction is not borne out, because there are a number of local varieties in which sentences like (87b) are more acceptable than (87a).

A similar conclusion can be drawn for (88). Notice, first, that sentences such as (90) turned out to be acceptable in any local variety of Dutch.

(90) a. *Mollen zijn blind.*
'Moles   are blind.'
b. *Belgen   zijn erg   beleefd.*
'Belgians are very polite.'

As a consequence, we expect expletive articles to be licensed neither in (88a) nor in (88b). This is not borne out by the facts: in a number of dialects, (88b) is more acceptable than (88a).

Let us now examine whether the expletive articles in (87) and (88) can be assumed to be licensed by grammatical features. The question is: would it make sense to assume that the expletive article expresses grammatical features in sentences such as (87b) and (88b), but not in sentences like (87a) and (88a)? Notice that while animal names can be neuter as in (91), or non-neuter (in this case masculine) as in (87a), nationality names are always non-neuter (cf. (87b)).

(91)   *Het damhert   is een vriendelijk dier.*
       'The fallow deer is a   friendly   animal.'

We can conclude that it would not be plausible to assume that expletive articles introducing nationality names express grammatical features, while articles introducing animal names do not express grammatical features. Furthermore, there is only one form of the plural definite article, which is used in (88a) as well as in (88b). So, the difference between (88a) and (88b) cannot be accounted for by assuming that articles can be licensed if they express grammatical features.

7.3.6   Final remarks

We have discussed some problems that arise when Longobardi's approach is applied to Dutch (and English) data relevant to our purposes. One of the issues is that Longobardi assumes that English has LF-raising of proper names and common nouns. This accounts for the fact that English bare arguments can occur in positions which are not governed by a lexical head and can receive a characterizing interpretation. However, there is no (substantial) empirical or other evidence that Dutch or English has raising from N° to D° triggered by the constraints suggested by Longobardi (1994). It is more plausible to assume that Dutch and English common noun phrases without overt determiners are always introduced by empty determiners.

Another problem is that Longobardi assumes that expletive articles are licensed only if they express grammatical features or as a last resort. We have presented observations about the distribution of Dutch DPs in characterizing sentences. These data show a more complex picture than predicted by Longobardi's economy principle. In chapter 8, we will account for the distribution of expletive articles by assuming language particular selectional restrictions on articles.

Many of the assumption made by Longobardi (1994) are also adopted in more recent publications, such as Cheng & Sybesma (1999)'s paper on bare nouns in Chinese languages. Cheng and Sybesma assume that empty determiners (cross-linguistically) receive existential readings (cf. also Chierchia 1998) and are restricted to lexically governed positions. We have shown that these assumptions are problematic from the perspective of the data discussed in this book.

7.4   Longobardi (2001)

Some of the difficulties discussed in section 7.3 (and 7.2) are solved in later work by Longobardi. In this section, I will examine three important points of difference between Longobardi (1994) and Longobardi (2001).

We have concluded that Longobardi's (1994) approach cannot account for the ambiguity of bare arguments in characterizing sentences such as those in (90). Longobardi (1994) describes two derivations for bare arguments: they can be introduced by an empty determiner, which unambiguously leads to an existential interpretation, or they can undergo raising, which corresponds to a reading in which they are names of kinds (cf. 7.3.2). However, Longobardi's later work (in particular Longobardi 2001) conforms to the position argued for in chapter 6. Longobardi (2001: 354) assumes that English bare arguments are ambiguous in a way similar to the approach defended in chapter 6:

> "English [bare argument]s may be (…) semantically (…) ambiguous: they can be either kind names (…) or variables (the latter, in turn, existentially or generically bound), as treated in Kratzer-Diesing's framework. (…) English [bare arguments] might be potentially ambiguous even as generics (…)."[33]

So, Longobardi (2001) explicitly claims that English bare arguments are ambiguous between an interpretation in which they refer to kinds and a reading in which they correspond to variables. In chapter 6, the same point was made for Dutch bare arguments.

A second innovation in Longobardi (2001) concerns a point made in 7.2.9. In that section we have noted that in Longobardi's (1994) system the D° position introducing kind-referential DPs has the referentiality feature value –Referential, whereas proper names correspond to the value +Referential. This does not stroke with the idea that both types of DPs can directly refer to an entity, whether a kind or an object. This objection does not apply to Longobardi (2001: 360), who treats kind-referential DPs and object-referential proper names on a par:

> "[Proper names] and referential generic [bare argument]s have something *a priori* in common: they are *referential* expressions (…). In other words, they both denote whatever they denote (a kind or object, respectively) directly through the lexical reference of the head noun. (…) [L]anguages always resort to a *unified* strategy to assign object and kind reference to nominal structures."

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33.   The phrase 'as generics' could lead to terminological confusion. Importantly, Longobardi illustrates the relevant reading with the example sentence in (i). This suggests that 'ambiguous even as generics' means that bare arguments are ambiguous even in characterizing sentences such as (i).

(i)   Wounded tigers are dangerous.

In short, the idea is that strategies to assign reference to kinds and reference to objects are cross-linguistically parameterized, but individual languages always resort to a *unified* strategy of assigning such referential interpretations. Longobardi (2001: 361) assumes that the following strategy is followed in Romance languages:

> "[I]n Romance it necessarily depends on a D position overtly occupied either by the noun itself (raised proper names, with object reference) or by its placeholder, an expletive article (referential generic common nouns, with kind reference, or, again, proper names, with object reference)."

Note that this description of Italian is similar to the one proposed in Longobardi (1994).

The third point is that there is an important difference between the strategy to express referential interpretations in English proposed in Longobardi (1994) and the strategy proposed in Longobardi (2001). Longobardi (2001: 361–362) writes:

> "[I]n English referential status can be assigned to nominals with no overtly realized D (…). (…) [I]n English, [bare argument]s can be referential (instantiate kind-denoting constants), unlike in Romance, precisely because they have the same surface structure as [proper name]s. (…) [I]n certain languages the referential feature of the determiner position, D, is 'strong' (in an informal sense); that is, *visible* systematic association of referential items with D (either by overt movement of the noun itself or by means of an expletive placeholder) is necessary (…). In other languages, the referential properties of D are 'weak', i.e., referential readings may affect nominal items *not* overtly associated with D (…)."[34]

This assumption relates to an objection made in 7.3.1, where we noticed that there is no (substantial) empirical evidence that English (and Dutch) has the type of raising from N° to D° described by Longobardi (1994). It seems a step forward that Longobardi (2001) abandons the assumption of LF-raising in English. Given the approach sketched in Longobardi (2001), we can propose that in Dutch and

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34. Notice that Longobardi's claim that English has a "unified strategy" to assign referential readings to nominal structures is slightly more ambitious than can be justified. The 'unified' strategy is that in English referential status can be assigned to nominals with no overtly realized D. Yet, noun phrases such as *the tiger* and *the American* receive kind-referential readings as well, even though there is an overtly realized (possibly expletive) determiner. This does not imply that the idea that in English (and Dutch) referential properties of D are 'weak' is inadequate, but the claim that English (and Dutch) has a "unified strategy" to assign object or kind reference to nominal structures is difficult to maintain.

English the abstract feature [±R] is 'weak'. This implies that bare noun phrases can take kind-referential (as well as non-kind-referential characterizing) readings if the common noun is not visibly associated with D. In chapter 8, we will elaborate on this line of thought.

7.5   Chierchia (1998)

In the discussion of Longobardi (1994), we have noted that he assumes that only DPs can be used in argument positions. This means that "[e]ach time one sees a bare NP argument, the category D must have been projected" (Chierchia 1998: 343). Chierchia (1998) proposes an alternative view. He assumes that in some languages NPs without DPs can sometimes be used in argument positions. In this section, we will discuss the crucial assumptions of Chierchia's analysis.

One of Chierchia's central hypotheses was already discussed in chapter 6, where we saw that Chierchia (1998) argues against the Ambiguity Approach and assumes that bare DPs unambiguously refer to kinds (cf. section 6.1): "I will argue in favour of going back to (…) a Neocarlsonian view, where bare arguments unambiguously refer to kinds". In the following sections some other central assumptions made by Chierchia will be summarized. Chierchia's Nominal Mapping Parameter is outlined in 7.5.1. Section 7.5.2 is devoted to the Blocking Principle. Section 7.5.3 discusses an additional economy principle: Avoid Structure.

In section 7.6, some arguments against Chierchia's approach will be outlined. The assumptions discussed in 7.5.1–7.5.3 (and in chapter 6) play an important role in the discussion in 7.6.

7.5.1   Nominal Mapping Parameter

Chierchia (1998: 352) argues that common nouns play a double role. On the one hand, they can be predicates, as in (92a). In such sentences, the noun denotes a property. The same holds for nouns in quantified noun phrases such as *every man* (which means 'every x with the relevant *property…*'). On the other hand, in sentences such as (92b), the noun is an argument (and directly refers to an entity).

(92)   a.   John and Bill are <u>doctors.</u>
        b. %<u>Tigers</u> are threatened with extinction.

Chierchia assumes that these options are available in some form in every language. Languages only differ in *how* these options are actualized.

Chierchia hypothesizes that [±arg], [±pred] are features constraining the way in which nouns are mapped onto their interpretations. When a common noun has a [+arg] specification, this means that it can be mapped onto an argument.

Consequently, it can appear as a bare noun in an argument position. Common nouns with a [−arg] specification cannot be mapped onto arguments. Such common nouns can only be used in argument positions if a DP is projected (cf. also Marinis 2005). In a similar way, the value [+pred] means that nouns can be mapped onto predicates; [−pred] means that this option is not available.

Cross-linguistic variation is represented through the combination of these two features. There are three options, which correspond to possible language types: [+arg, −pred], [−arg, +pred] and [+arg, +pred]. The [−arg, −pred] is not a possible option, since this would suggest that nouns do not have any interpretation at all.

A first possible setting discussed by Chierchia is [+arg, −pred]. In such a language, every NP is of the argumental type, which means that bare nouns will be allowed to occur freely as arguments. So, speakers of such languages should be able to say things like *Girl saw boy* freely (Chierchia 1998: 353). According to Chierchia, this is actually the case in languages like Chinese and Japanese. An example sentence from Chinese is presented in (93).

(93) wò *kànjiàn xióng le*
      I   see   bear ASP
      'I saw (some/the/a) bear(s).'

This sentence is taken from Chierchia (1998: 354).

The languages under consideration in this study are assumed to be specified as [−arg, +pred] or [+arg, +pred]. Romance languages are of the [−arg, +pred] type. This means that common nouns are mapped onto predicates. Consequently, Romance nouns need a DP layer when they occur in argument positions. As is well-known, these are the characteristics of a language like French, which basically disallows bare arguments, as illustrated in (94) (Chierchia 1998: 355).

(94) a. **Enfants sont venus chez nous.*
          kids   have come by   us
      b. **J'ai   mangé biscuits dans mon lait.*
          I have eaten   cookies with my milk

Chierchia (1998) assumes that some languages with this specification might have empty determiners. French does not have this possibility, as illustrated in (94). Chierchia follows Longobardi (1994) in assuming that Italian does have empty determiners, but only in positions governed by a lexical head (cf. also section 7.2.3). Some example sentences from Chierchia (1998: 356) can be found in (95).

(95) a. **Bambini sono venuti da noi.*
          kids   have come by us
      b. *Ho preso biscotti con il mio latte.*
          I had   cookies with the my milk
          'I had cookies with my milk.'

Chierchia (1998: 356) makes the following generalization: "modulo the availability of a null D, we will have either no bare arguments or bare arguments restricted by conditions that typically govern the distribution of phonologically null elements."

Finally, common nouns in Germanic languages have the specification [+arg, +pred], i.e., determinerless NPs can be argumental as well as predicative. English and Dutch, for example, allow both predicative and argumental NPs, as illustrated in (92) above and (96).

(96)   a.   *Jan en   Willem zijn dokters.*
            'Jan and Willem are doctors.'
       b.   *%Tijgers zijn met   uitsterven bedreigd.*
            tigers   are with extinction threatened
            'Tigers are threatened with extinction.'

7.5.2   Blocking Principle

The fact that in languages such as English determinerless noun phrases can in principle occur in argument positions does not mean that this is possible under any interpretation. Example sentences illustrating this point are presented in (97).

(97)   *#(De)   tijgers zijn aan het brullen.*
       #(The) tigers are roaring

The definite/specific reading of such sentences disappears if the articles are omitted. Under this reading, these NPs cannot be used in argument position without being introduced by a (definite) determiner.

Chierchia accounts for such data by assuming an economy principle, which he refers to as the Blocking Principle. Chierchia (1998: 360) writes:

> "Suppose that the language has a morpheme (…) whose semantics amounts to one of the type-shifting operations (…). Then (…) such a type shifting could not be used covertly because the language has an overt way of achieving the same effects. Thus, in particular, if there is a determiner D whose meaning is a particular type shifting, then use of that operation as an automatic type-changing functor [i.e., without using the overt determiner D] is blocked"

The Blocking Principle is formalized as follows (cf. Chierchia 1998: 360):

(98)   "*Blocking Principle*
        For any type shifting operation τ and any X:
            *τ(X)
        if there is a determiner D such that for any set X in its domain,
            D(X) = τ(X)"

This amounts to saying that if a language has an overt determiner with a certain semantics, then covert operations with the same semantics are blocked, i.e., are

not available in the language. For the sake of illustration, let us apply this principle to the sentences in (97). These sentences show that English and Dutch have a determiner which semantically corresponds to the ι-operator. In Chierchia's (1998: 359) semantics, this operator "selects the greatest element from the extension of a predicate". It can apply to the denotation of a common noun to give the definite/ specific reading. On the basis of the fact that English and Dutch have a determiner with this particular meaning, the Blocking Principle predicts that a covert operation with the same semantics, i.e., a covert ι-operator, is not available in English and Dutch. This means that a bare argument cannot receive a definite/specific reading. This prediction is borne out (as illustrated in (97)).

As a further illustration of the Blocking Principle, I will show how Chierchia (1998: 386–394) accounts for some relevant Italian data by applying the Blocking Principle. Recall that Chierchia assumes that Romance languages are of the type [−arg, +pred]. This means that NPs in Italian are predicates and that they can only be arguments if a D° position is projected. We can conclude from this that Italian bare arguments are in fact DPs with a null D°. For example, *patate* 'potatoes' will have the syntactic structure presented in (99).

(99)
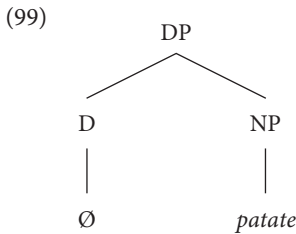
On the basis of the Blocking Principle we can make some predictions about the functions the phonologically null head of D can perform. Sentence (100) illustrates that a definite article can receive a definite/specific interpretation.

(100)   *La   sedia è   in cucina.*
        the chair is in kitchen
        'The chair is in the kitchen.'

We predict that the (covert) iota-operator, which corresponds to a definite/specific interpretation, is 'blocked' by the definite article and that bare arguments with null D° cannot receive a definite/specific reading, which is the desired result.

At first sight, we predict that bare arguments with null D° cannot receive kind-referential readings, since definite articles admit kind readings, as illustrated in (101). These example sentences originate from Chierchia (1998: 342, 392).

(101)   a.   *Il   dodo è   estinto.*
             'The dodo is extinct.'

b.   *I   cani abbaiano.*
    the dogs bark
    'Dogs bark.'

Chierchia (1998: 393) notes that the prediction that bare arguments do not receive kind-referential readings is not borne out: "Italian winds up having two devices for kind reference: the null determiner (…) and the definite article. How come there is no blocking effect of the latter on the former, if they are so close in meaning?"[35] Some relevant examples of bare arguments receiving kind readings are presented in (102) (cf. Chierchia 1998: 384–385).

(102)   a.   *Qui, ragazze in mini gonna sono rare.*
       here girls   in mini skirt are   rare
    b.   *Leo stermina   ratti.*
       Leo exterminates rats

Assuming that *raro* ('rare') and *sterminare* ('exterminate') are kind-selecting predicates (a claim which is problematic, cf. section 7.6.3), we can conclude that bare arguments do indeed receive kind readings.

So, the data in (101) and (102) are problematic for the Blocking Principle. We expect the definite article in (101) to block the null D° in (102).

However, Chierchia argues that there is a subtle difference between the semantics of the definite article in sentences like those in (101) and the semantics of the null D° positions in (102). Let us first examine the semantics of the empty determiner in the sentences in (102). Chierchia assumes that the empty determiner corresponds to an operation which shifts a property into a kind and that "a kind can be manufactured out of a property by taking the largest member of its extension (at any given world)" (Chierchia 1998: 351, my underlining, AO).

Let us now discuss the semantics of the definite article in sentences like (101). According to Chierchia (1998), the definite article "essentially means ι". In such an account, definite articles in sentences like (101) have the same semantics as the definite article in (100): they correspond to the iota-operator. In Chierchia's (1998: 359) semantics, the iota-operator "selects the greatest element from the extension

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35.   Chierchia (1998: 360) writes that the *Blocking Principle* states that type shifting operations τ are blocked if "there is a determiner D such that for any set X in its domain, D(X) = τ(X)" (cf. (98)). Notice that this formulation leads to confusion, since it is not clear whether empty determiners fall under the category of determiners D or under the category of covert type shifting operations. In our discussion, we assume that empty determiners fall under the latter category. Note that the passage cited from Chierchia (1998: 393) (as well as other passages) makes clear that null determiners can have a blocking effect on definite articles. This suggests that empty determiners do indeed fall under the category of "covert type shifting operations".

of a predicate". Chierchia (1998: 392) claims that if such an operator occurs in an intensional context, we end up with a kind reading: "(…) [I]n appropriate (intensional) contexts we will be able to obtain with ι (i.e., the definite article) what we can get in English with (…) bare nominals (…). The relevant contexts are two: generic [i.e., characterizing] sentences and sentences with kind-level predicates." So, Chierchia assumes that kind-referential interpretations are not inherent to definite articles, but are the result of the intensional contexts in which the relevant DPs are used.

This implies that although (101) and (102) are similar in meaning, there is a subtle difference in how their meanings are derived from the meanings of the components. Chierchia assumes that this is sufficient to prevent the Blocking Principle from blocking the null determiners in (102). Thus, he explains that both the sentences in (101) and the sentences in (102) are well-formed.

7.5.3 Avoid Structure

In the previous section, we saw that Chierchia proposes a complex semantics for Italian kind-referential DPs. His analysis accounts for the Italian data presented in 7.5.2. However, the Blocking Principle makes incorrect predictions about English kind-referential DPs. This is illustrated in (103).

(103) a.   (#The) dogs bark.
       b.   (#The) dogs are common.

The use of the definite article is ungrammatical in such sentences. Yet, the Blocking Principle does not predict that using the definite article is ill-formed in such contexts, since Chierchia argues that the semantics of the kind-referential definite article is not (fully) similar to the empty determiner (cf. the previous section).

Chierchia (1998: 393) accounts for such data by assuming an additional economy principle: Avoid Structure (cf. Cardinaletti & Stark 1996 and Rizzi 1997 for similar assumptions, applied to other phenomena). This principle is presented in (104).

(104)   *Avoid Structure*
        Apply SHIFT at the earliest possible level.

The notion *SHIFT* refers to type shifting operations which can be applied to NP denotations to produce a suitable denotation for an argument position. Examples of such operations are the iota-operator and the operation which maps a property onto a kind. The principle in (104) states that such operations should be applied at the earliest possible level. Since English is a [+arg, −pred] language, the relevant operations can already be applied at the NP level. Avoid Structure predicts that when this option is available, it must be chosen over one which

involves projecting D.[36] As a consequence, the use of the definite article in sentences such as (103) is correctly predicted to be ungrammatical.

7.6 Problems for Chierchia's (1998) approach

In 7.6.1–7.6.3, we argue that Chierchia's approach leads to important problems when some of the Dutch and English data presented and discussed in the previous chapters are taken into consideration.[37]

7.6.1 Bare arguments in the direct object position of kind predicates

Chierchia (1998) claims that English is a [+arg, +pred] language. The assumption that English belongs to another language type than Italian, which is of the [−arg, +pred] type is important for (at least) two reasons. A first reason is that Chierchia uses this assumption to account for the fact that English definite plurals cannot receive kind readings, as was illustrated in (103). This is a consequence of the Nominal Mapping Parameter and Avoid Structure. In Italian, however, definite singulars and plurals (cf. (101), repeated as (105)) as well as bare plurals (cf. (102), repeated as (106)) receive kind readings.

(105)   a.   *Il dodo è estinto.*
        b.   *I cani abbaiano.*

(106)   a.   *Qui, ragazze in mini gonna sono rare.*[38]
        b.   *Leo stermina ratti.*

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36. This suggests that there is a difference between the Blocking Principle and Avoid Structure: while the Blocking Principle only blocks covert operations if the relevant determiner has exactly the same semantics (in the sense specified in 7.5.2), Avoid Structure does not require that the determiner has exactly the same semantics as the covert operations. Thus, Chierchia's economy principles are formulated in a rather *ad hoc* way.

37. We will focus on Chierchia's account of Italian data and on the predictions he makes about Dutch, English and German data. I refer the reader to Schmitt & Munn (1999) and Chung (2000) for some arguments against Chierchia's Nominal Mapping Parameter based on Brazilian Portuguese and Indonesian, respectively.

38. Notice that the bare plural *ragazze in mini gonna* appears in a position which is not governed by a lexical head and thus violates the lexical government requirement. Longobardi (2000: 693) claims that "[m]odification, unnecessary for clearly lexically governed [bare argument]s such as direct objects, seems to somehow remedy the violation." This claim can be applied to the bare plural in (106a), which contains the modifier in mini gonna.

Chierchia explains this as a result of the fact that Italian has [−arg] bare plurals as well as definite singulars and plurals are full DPs. This means that Avoid Structure does not apply to the Italian data in (105) and (106).

A second reason why the assumption that English has [+arg] and Italian has [−arg] is important, because it explains that English NPs occur (freely) as bare arguments, while Italian bare arguments are "restricted by conditions that typically govern the distribution of (…) null elements" (Chierchia 1998: 356).

It is not clear, however, how this account can deal with sentences such as those in (107) from Krifka et al. (1995), which are presented with the original acceptability judgements (cf. also chapters 2, 6 and section 7.3.4 for similar data for Dutch and varieties of Dutch).

(107) a. ?The Sumerians invented pottery wheels.
      b. John hates cigarettes.

These example sentences show that English bare arguments are restricted: under kind readings, they cannot occur in direct object position.

A plausible account of these data is that English bare arguments are always introduced by empty determiners. Suppose that there are two variants of English empty determiners: the determiner introducing *pottery wheels* in (107a) corresponds to a kind-referential reading, while the determiner introducing *cigarettes* in (107b) corresponds to a variable-introducing reading. Let us assume that determiners introducing kind-referential noun phrases have the feature value [+R(eferential)]. This is in line with Longobardi (2001) (cf. 7.4). The distribution of such empty determiners can now be captured by the generalization in (108). This principle does not apply to DPs receiving a variable-introducing reading. Such DPs do not have the value +R.

(108) English empty determiners with a [+R] value may not be governed by the head V.

Here we follow the assumption, made by Longobardi (1994), Chierchia (1998), Adger (2003) and others, that the direct object position is governed by the verbal head.

Note that there could well be other lexically governed positions in which kind-referential bare noun phrases are not licensed. Future (corpus- and questionnaire-based) research on the distribution of bare arguments may clarify this point. Chierchia's parameter setting for English does not predict any restrictions on the distribution of bare arguments in this way. It is not clear how Chierchia's approach could account for the restrictions on English and Dutch bare arguments.

7.6.2   Restrictions on definite articles in kind-referential contexts

Chierchia (1998: 357) hypothesizes that other Germanic languages can be treated on a par with English in that they are of the type [+arg, +pred] just like English.

If this is true, we predict that Dutch definite plurals are similar to English definite plurals and do not receive kind readings. Some example sentences were presented in (88), repeated below as (109).

(109) a. *%De mollen zijn blind.*
       b. *%De Belgen zijn erg beleefd.*

The principle Avoid Structure predicts that the sentences in (109) are ill-formed under kind readings of the subject DPs, since such readings can also be expressed by bare plurals (cf. (90), repeated below as (110)). This prediction is not borne out. Recall from chapters 4 and 5 that a proportion of speakers of Standard Dutch and dialects or varieties of Dutch do accept sentences like (109).

Are there solutions to this problem? Possibly, Avoid Structure simply does not play a role in varieties of Dutch in which sentences such as those in (109) are well-formed. On this assumption, we would predict that in the relevant varieties of Dutch bare arguments as well as DPs with definite articles can be grammatical. This would suggest that Avoid Structure is not a principle of natural language, but corresponds to a parameter which has different settings in distinct varieties of the same language. This is an undesired solution. The idea behind an economy condition like Avoid Structure is that it forbids building more syntactic structure than required. It would be unattractive if such a condition was subject to variation among speakers (of varieties of) one and the same language.

A second solution would be to assume that some varieties of Dutch are similar to Italian and do no have the Germanic setting [+arg, +pred], but the Romance setting [−arg, +pred]. This suggests that in such varieties bare nouns without a DP cannot be used in argument positions and that a bare argument is always introduced by an empty determiner. A consequence of this would be that in such varieties plural DPs with definite articles are predicted to be well-formed, since definite plurals as well as bare plurals have a DP layer. A drawback of this approach is that it leads to an unparsimonious account of sentences like (90), repeated as (110): In varieties in which definite plurals are acceptable in sentences like (109), a bare plural is introduced by an empty determiner, while in varieties in which definite plurals are unacceptable in such sentences, a bare plural is not introduced by a determiner (and not dominated by a DP).

(110) a. *Mollen zijn blind.*
       b. *Belgen zijn erg beleefd.*

Similar variation can be found with respect to German plurals and mass terms. Longobardi (1994: 653) points out, for example, that "it is normally possible to use both plural and mass generics (…) with or without the definite article, so that

either variant of [111a]–[111b] appears to be acceptable, with essentially the same generic interpretation."

(111) a. *(Die) Biber bauen Dämme*
       b. *(Die) Milch ist weiß.*

The sentences in (111) are repeated from (61a) and (61b).

   This suggests that German has similar inter-speaker variation as Dutch. From such data, we conclude that some of Chierchia's assumptions must be revised. We have discussed possible ways to account for the data. These suggestions have their own drawbacks, as was shown above.

7.6.3   Problems related to lexical distinctions

7.6.3.1   *Lexical semantic classes of nouns*
In section 7.3.5, where some problems of Longobardi's (1994) approach were examined, we pointed out that the questionnaire study presented in chapter 5 shows that lexical semantic classes have an influence on acceptability scores for characterizing sentences. This point can be illustrated by example sentences like those in (109), repeated as (112).

(112) a. *De mollen zijn blind.*
       b. *De Belgen zijn erg beleefd.*

We found that there are a number of varieties in which sentences like (112b), in which a nationality name is used, are more acceptable than (112a), in which an animal name is used.

   Let us apply Chierchia's (1998) variant of the principle of 'Avoid Structure' to these sentences. Avoid Structure predicts that both sentences in (112) are unacceptable. This prediction is not borne out, because in a number of varieties there are differences in acceptability between (112a) and (112b). It is not clear how this can be solved in Chierchia's analysis. Suppose that we account for the acceptability of (112b) by assuming that Avoid Structure does not play a role in the relevant variety or that the variety has another setting for the Nominal Mapping Parameter than Standard Dutch. In that case, we would not be able to account for the fact that (112a) is unacceptable for some speakers in the same variety.

7.6.3.2   *Well-established kinds (in relation to kind predicates)*
Recall from 7.5.2 that Chierchia (1998: 393) claims that "Italian [has] two devices for kind reference: the null determiner (…) and the definite article." This point was illustrated in (105) and (106), repeated below as (113) and (114).

(113) a. *Il dodo è estinto.*
       b. *I cani abbaiano.*

(114) a. *Qui, ragazze in mini gonna sono rare.*
     b. *Leo stermina ratti.*

These data are problematic for the Blocking Principle, which predicts that the definite article in (113) 'blocks' covert operations with the same semantics (cf. (114)). In section 7.5.2, we discussed how Chierchia accounts for this problem. He claims that although the definite singulars in (113) as well as the bare plurals in (114) receive kind readings, there is a subtle semantic contrast between the null determiner and the definite article.

     Chierchia (1998: 385) recognizes that "controversy surrounds the status of [Italian] bare arguments with kind-selecting predicates" and that sentences like (115) are "not very good".

(115) *??Ragazze in minigonna sono estinte.*
      girls   in mini skirt are   extinct

Chierchia argues that this is not a problem for his observation that Italian bare plurals receive kind-referential readings, since "adjectives like 'extinct' require what Krifka et al. (1995) call 'well-established' kinds." If one chooses "more liberal kind-selecting predicates", such as *rare*, things are different, as is illustrated in (114a).

     So, Chierchia assumes that kind predicates can be attributed to bare arguments as well as to DPs with definite articles, the only difference being that kind predicates requiring 'well-established' kinds cannot be attributed to bare arguments.

     This view leads to some difficulties. A first point is that it would entail a strange discrepancy between data from (languages such as) English and (languages such as) Italian. English kind-referential bare plurals have been argued to be *less* restricted than definite singulars, in that bare plurals can be used with common nouns that do not correspond to 'well-established' kinds (cf. (116) and (117), see chapter 6 for further details).

(116) a. The Coke bottle has a narrow neck.
     b. Coke bottles have a narrow neck.

(117) a. ??The green bottle has a narrow neck.
     b. Green bottles have a narrow neck.

Chierchia argues that in Italian bare arguments are *more* restricted in that they necessarily refer to 'well-established' kinds. His account implies that English bare arguments are semantically similar to Italian definite DPs, while English definite DPs are similar to Italian bare arguments. Although this is not strictly impossible, it is clear that Chierchia's account leads to a rather complicated description of the data.

     A second argument against Chierchia's view is concerned with the fact that *estinto* is a 'better' example of a kind predicate than *rare*. This is the reason why

(114a) is more acceptable than (115). Further discussion of this point follows in the next section.

7.6.3.3 *Kind predicates*

Krifka et al. (1995: 95–98) and Cohen (2005) argue that predicates such as *be rare* and *be common* are not good examples of kind predicates. On the basis of this claim, Cohen (2005) argues against Chierchia's hypothesis that Italian bare plurals can refer to kinds. Krifka et al. refer to predicates like *be rare* and *be common* as 'quantificational predicates'. Sentences in which such predicates are attributed to indefinite singulars are relatively acceptable. This suggests that such predicates do not belong to the class of kind predicates. A Dutch example illustrating this point is presented in (118a). The acceptability of the sentence increases if a pronoun is inserted, as in (118b).

(118)   a.   ?*Een neushoorn is zeldzaam.*
              a   rhino   is rare
              '*Situations* in which one encounters a rhino are rare.'
         b.   *Een neushoorn, dat   is zeldzaam.*
              a   rhino   that-N,SG is rare
              '*Situations* in which one encounters a rhino are rare.'

Note that *een neushoorn* ('a rhino') is not the antecedent of *dat* in (118b): *neushoorn* is a masculine common noun, while *dat* is a neuter form of the pronoun. Probably, *dat* has an implicit antecedent, which roughly corresponds to *a situation in which one encounters a rhino*. This suggests that the sentences in (118) express that such a situation is rare.

For an alternative description of the facts, I refer the reader to Krifka et al. (1995) and Cohen (2005), who assume that (119) means that 'The chance of encountering a blue-eyed rhino is high' (cf. Krifka et al. 1995: 96).

(119)   A rhino with blue eyes is common.

A problem for this description is that pronouns such as *dat* in (118b) do not seem to refer to *the chance of encountering a rhino*: sentences like *the chance of encountering a rhino is rare* are not very natural sounding.

Observe that the sentences in (120) are completely ill-formed.

(120)   a.   #*Een neushoorn is bijna   uitgestorven.*
              a   rhino   is almost extinct.
         b.   **Een neushoorn, dat   is bijna   uitgestorven.*
              a   rhino   that-N,SG is almost extinct

This suggests that *uitgestorven zijn* ('be extinct') is a 'better' example of a kind predicate than *zeldzaam zijn* ('be rare'). Sentences such as (118a) are probably

relatively acceptable since *zeldzaam* can denote a property of situations and does not necessarily select a kind.

The fact that sentence (121), in which *die* agrees with *de neushoorn*, is fully acceptable further strengthens the point that *uitgestorven zijn* ('be extinct') is a proper kind predicate (contrary to *zeldzaam zijn* ('be rare')).

(121)   *De neushoorn, die   is bijna   uitgestorven.*
          the rhino,   that-NN,SG is almost extinct.
          'The rhino: that is an almost extinct species.'

So, a plausible conclusion is that noun phrases like *een neushoorn* in (118a) do not refer to a kind. Sentences like (118a) can be represented by assuming that *een neushoorn* introduces a variable, which is bound by GEN. A semantic representation of (118a) is presented in (122).

(122)   GEN[x,s;] [**neushoorn**(x) & **in**(x,s)] [**zeldzaam**(s)]
          'In general, situations s in which a rhino appears are rare.'

These observations on the semantics of sentences such as (118a) cast serious doubt on the conclusion that Italian bare arguments refer to kinds. Probably, the bare plural *ragazze in minigonna* ('girls in mini skirt') in (114a) is more adequately interpreted as an expression which does not refer to a kind, but introduces a variable, just like *een neushoorn* in (118).

Another example sentence from Chierchia (1998: 384) is presented in (114b), repeated as (123). This sentence is not discussed by Cohen (2005).

(123)   *Leo stermina ratti.*

Sterminare ('exterminate') might be a better example of a kind predicate than *rare*. Note, however, that Dutch sentences like (124) are (relatively) acceptable as well (even though bare plurals are unacceptable in the direct object position of kind predicates like *uitvinden* ('invent')).

(124)   *Ik heb vandaag (enkele) ratten uitgeroeid.*
          I   have today   some   rats   exterminated.
          'Today, I destroyed (some) rats.'

In such sentences, the verb *uitroeien*, which is presumably equivalent to Italian *sterminare*, does not mean that the species as a whole has been exterminated, but means that a number of rats (or a group of rats) have been destroyed. Probably, the same holds for Italian sentences like (123).

Cohen (2005) therefore rightly questions Chierchia's assumption that Italian bare plurals refer to kinds. The data discussed here further strengthen the Ambiguity Approach (cf. chapter 6). A plausible conclusion is that Italian bare arguments have a subset of the interpretations possible for Dutch and English bare

arguments: while Dutch and English bare arguments are ambiguous between a kind reading and a reading in which they introduce a variable, Italian bare arguments only receive the latter reading. This explains that sentences like (123) are acceptable: in such sentences predicates are used which do not (necessarily) select kind-denoting noun phrases. Such sentences can be represented by assuming that the relevant bare arguments introduce variables, in a way similar to (122). Sentences like (115) are then correctly predicted to be (relatively) unacceptable, since *estinto* unambiguously selects a kind-referring subject. As a consequence, we do not need to make a distinction between well-established kinds and kinds which are not well-established. This is a welcome result from the perspective of the arguments against this distinction, presented in chapter 6.

This conclusion is problematic for the Blocking Principle. The Blocking Principle predicts that Italian bare arguments are well-formed under a kind reading (cf. 7.5.2). In this section, we have argued that Italian bare arguments are in fact ill-formed under this reading.

7.7 Final remarks

The influential papers by Longobardi (1994) and Chierchia (1998) assume that nominal constituents without overt determiners are not necessarily introduced by empty determiners. Longobardi (1994) proposes an alternative derivation of kind-referring bare arguments: the noun raises from N° to D° and substitutes for the phonologically empty syntactic category present in D°. The arguments in favour of raising of Italian proper names are convincing. However, the claim that in English and related languages the same type of raising can take place at LF is more difficult to maintain. In chapter 8, I will present an account of Dutch bare arguments which does not assume LF raising, which is in line with Longobardi (2001).

Chierchia (1998) argues that in Germanic languages an NP can be used in an argument position without a Determiner Phrase being projected. He assumes a number of principles (the Blocking Principle and Avoid Structure) to account for the fact that Dutch and German plural common nouns and German mass nouns can be introduced by definite articles under kind readings. Unfortunately, Chierchia's principles cannot deal with the complexity of the data presented in this book. A more plausible approach to these data would be that in Germanic languages nouns are always introduced by a D° position, just like in Romance languages.

An alternative description of the syntax and semantics of articles

8.1 Introduction

In this chapter an approach to the syntax and semantics of empty and definite articles will be presented. The focus is on the description of the use of these articles in characterizing and kind predicate sentences. We will also examine some aspects of the selectional and distributional properties of articles under definite/specific and existential interpretations. This is important to gain insight in the determiner systems of the languages under consideration. The chapter discusses Standard Dutch, English, German, Italian and varieties of Dutch.

This chapter is organized as follows. In 8.2, I will sketch some basic assumptions underlying our approach. Sections 8.3, 8.4 and 8.5 are devoted to a description of selectional and distributional properties of empty determiners and definite articles. In section 8.3, we will account for selectional properties of empty determiners. In section 8.4, the syntactic distribution of empty determiners will be discussed. Section 8.5 is devoted to definite articles. Most of the discussion in 8.5 will be concerned with the selectional properties of definite articles, since a restricted syntactic distribution is not typically a property of definite articles (but rather of empty determiners). Finally, the conclusions will be presented in section 8.6.

8.2 Basic assumptions

In this section, I will outline some basic assumptions underlying the approach presented in this chapter. In 8.2.1, we will discuss the assumption that argument noun phrases are always introduced by a determiner, whether they are empty or not. The approach in this chapter is based on the assumption that there are three types of determiners, depending on the semantics of determiners. These three types correspond to the (kind-)referential, the variable-introducing and the definite/specific interpretation, respectively. This point will be discussed in 8.2.2.

8.2.1   Noun phrases are DPs

Chierchia claims that Germanic languages differ from Romance languages in that Germanic arguments are not necessarily introduced by (empty or non-empty) determiner. In section 7.6, three arguments were given against this claim. A first point is that sentences like (1) and (2) are not well-formed in English and Dutch (cf. section 7.6.1).

(1) ??The Sumerians invented pottery wheels.

(2) #*Edison heeft gloeilampen uitgevonden.*
     Edison has   light bulbs   invented
     'Edison invented light bulbs.'

In Chierchia's system, Germanic kind-referential arguments without overt determiners are assumed to be bare NPs, and not DPs. Recall that Chierchia (as well as Longobardi) accounts for the distributional restrictions on Romance bare arguments by a lexical government condition. Along the same lines, the data in (1) and (2) could be accounted for by a similar constraint on the distribution of empty determiners. This suggests that arguments without overt determiners are in fact DPs and not NPs.

A second point is that Chierchia's assumption does not account for differences among Germanic languages. Chierchia accounts for the ill-formedness of sentences like (3) (under the characterizing reading), by assuming the economy principle Avoid Structure.

(3) #The beavers build dams.

The crucial point is that the characterizing reading which corresponds to sentence (3) can be expressed by English bare NPs (cf. (4)).

(4) Beavers build dams.

When this option is available, Avoid Structure predicts that it must be chosen over one which involves projecting D. This accounts for the ill-formedness of (3).

The problem is that a number of speakers of German and Dutch do accept the use of definite articles in characterizing sentences like (5) and (6a).

(5) a. *(%Die) Biber   bauen Dämme.*
        the   beavers build dams
        'Beavers build dams.'
    b. *(%Die) Milch ist weiß.*
        the   milk is white
        'Milk is white.'

(6) a. *(%De) bevers   bouwen dammen.*
        the   beavers build   dams
        'Beavers build dams.'

b. *(#De) melk is wit.*
   the   milk is white
   'Milk is white.'

In Chierchia's system, a logical account of these data is that the relevant idiolects or local varieties of German and Dutch are similar to Romance languages in that argument noun phrases are necessarily introduced by (empty or non-empty) determiners. As a result, the structure of bare arguments would be just as complex as the structure of DPs introduced by definite articles. This would, however, mean that in these languages bare arguments do not receive a uniform treatment: in some varieties bare arguments are NPs without determiners, in other varieties bare arguments are DPs introduced by empty determiners. In this way, things become much more complicated than recognized by Chierchia (1998).

A third point is that there is considerable variation among languages and varieties of languages with respect to the types of common nouns that can be preceded by definite articles. In some local varieties of Dutch, only nationality names can be preceded by definite articles (as in (7)).[1]

(7)   *(De) Chinezen eten met twee stokjes.*
      the   Chinese eat with two sticks-DIM
      'Chinese eat with two small sticks.'

In other varieties, the use of definite articles with nationality names (cf. (7)) yields the same judgements as the use of definite articles with animal names (cf. (6a)). It is not clear how Chierchia (1998) would account for this.

In this chapter, I will assume that a more plausible assumption is that argument noun phrases must be introduced by determiners not only in Romance languages, but in the Germanic languages under consideration in this study as well.

8.2.2   The feature ±Referential and three types of determiners

The claim that in the Germanic languages under consideration, noun phrases are (necessarily) introduced by determiners makes it possible to assume that the ambiguity of bare arguments is the result of the fact that D° has a feature [±Referential]. In chapter 6, we argued extensively that bare plurals such as *tijgers* in the

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1. Note that our questionnaire study contains a number of sentences with nationality names. This allows us to draw reliable conclusions about this class. A plausible hypothesis is that nationality names have a similar distribution as other names for [+human] categories, such as names of political groups (*the Communists*, *the Republicans*), names of inhabitants of a city (*the New Yorkers*) or names of inhabitants of a province (*the Zeelanders*). Our questionnaire does not include such nouns. More research needs to be done in this direction.

characterizing sentence in (8) are ambiguous between a kind-referential reading and a reading where the bare plural does not refer to a kind.

(8)   *Tijgers leiden een solitair bestaan.*
     'Tigers lead   a   solitary existence.'

If Dutch bare arguments are introduced by empty determiners, we can account for this by assuming that there are in fact (at least) two empty determiners. One empty determiner has the feature value [+Referential], the other empty determiner has the value [−Referential].

The idea that determiners have an abstract referentiality feature originates from Longobardi (1994). The assumption that this feature leads to the ambiguity of (characterizing) sentences such as (8) is particularly well compatible with Longobardi (2001). Longobardi (2001) makes two crucial assumptions, which are presented in the following quotes (cf. section 7.4):

> "Romance bare nouns are *only quantificational* expressions (i.e., variables, indefinites); they thus behave like overt indefinites and unlike proper names. English bare nouns can *also* be *referential* (i.e., generic constants, kind names); they thus behave unlike overt indefinites and like proper names (. . .)."
>
> (Longobardi 2001: 355)
>
> "The crosslinguistic variation in the interpretation of [bare argument]s (. . .) is reduced to the abstract parametric difference discussed by Longobardi (1994, 1996) (. . .): in certain languages the referential feature of the determiner position, D, is 'strong' (in an informal sense) (. . .). In other languages the referential properties are 'weak' (. . .)" (Longobardi 2001: 361)

The assumption that the ambiguity of bare arguments corresponds to the two values of the referentiality feature ([+R] and [−R]) is presented in (9) (cf. Longobardi 2001).

(9)   a.   [−R] corresponds to *quantificational* interpretations (i.e., variables, indefinites)
        b.   [+R] corresponds to *referential* interpretations (i.e., generic constants, kind names).

We assume that DPs with the value [+R] *directly* refer to an entity (i.e., an object or a kind), while DPs with the value [−R] do not directly refer to an entity, but tell us something about the quantity of objects (or kinds, if the DP receives a taxonomic interpretation, cf. chapter 3). Note that this distinction is reminiscent of Longobardi's (1994) distinction between *denotational* and *referential* readings (cf. 7.2.6).

This feature system can be further implemented by assuming that the values [−R] and [+R] on determiners correspond to a feature [±R] on common nouns and that the feature on common nouns must be licensed or 'checked' during the derivation (i.e., the feature on common nouns is uninterpretable). If the feature is

not checked, the derivation 'crashes'. In recent literature, the assumption has been made that features can be checked and valued under c-command (Chomsky 2001, cf. also Adger 2003: 167). Let us assume that the feature [±R] is a feature which can be checked and valued under this configuration. As a result of checking, the feature [±R] on a common noun gets the same value as the feature on the determiner. Thus, we predict that a common noun is necessarily introduced by a (non-empty or empty) determiner, which is the desired prediction.

There are varieties of Dutch which do not have an empty determiner with value [+R]. We predict sentences like (10) to be ruled out by speakers of such varieties.

(10)   *Tijgers worden met uitsterven bedreigd.*
      tigers are   with extinction threatened
      'Tigers are threatened with extinction.'

It should by now be clear that this does not exclude the possibility that speakers of such varieties find (8) acceptable. Sentences like (8) can receive an interpretation which corresponds to the value [-R] on the empty determiner. The value [−R] stands for *quantificational* interpretations, i.e., interpretations in which a DP introduces a variable (cf. (9a)), which can be bound by a generic operator. This is an accurate implementation of the observations and assumptions made in chapter 6.

Sentences like (11) from ter Laan (1953) illustrate that the dialect of Dutch spoken in (the North of) the province of Groningen (cf. 7.3.3) has a third type of empty determiner.

(11)   a.   *Man het geliek.*
         man has right
         'The/That man is right.'
     b.   *Peerd löpt in 't laand.*
         horse walks in the land
         'The horse is walking in the field.'

These example sentences can be described by assuming that the bare singular counts *man* and *peerd* are introduced by an empty determiner corresponding to a definite/specific reading.

Notice that the bare singulars in (11) do not receive an interpretation in which they directly refer to the entity (i.e., the kind) corresponding to the common noun. This suggests that the relevant empty determiner does not have the value [+R]. A plausible hypothesis is that the Groningen empty determiner illustrated in (11) has the value [−R] and that a noun phrase introduced by such an empty determiner receives a *quantificational* interpretation (cf. (9a)). There is, however, a difference between the quantificational interpretations of bare arguments in sentences like (8) and the quantificational interpretations of the Groningen bare singulars in (11).

While the variable introduced by *tijgers* in (8) is bound by an external quantifier (in this case the generic quantifier), *man* and *peerd* in (11) are inherently definite/specific. This can be described by assuming that the set of features corresponding to the empty determiner illustrated in (11) includes an iota-operator 'ı' (apart from the value [−R]). The assumption that the set of features of an empty determiner can include such an operator is borrowed from Longobardi (1996: 21).

An iota operator can apply to the denotation of a common noun to give the definite/specific reading. Such operators are normally used to interpret definite articles, such as *de* (the-nn) and *het* (the-n) in Standard Dutch sentences like (12).

(12)   a.   *De   man heeft gelijk.*
            the   man has   right
            'The man is   right.'
       b.   *Het paard loopt in het land.*
            the horse walks in the land
            'The horse is walking in the field.'

These definite articles have exactly the same interpretation as the empty determiners in (11).

Standard Dutch has an empty determiner with the same set of features [−R,ı]. However, Standard Dutch differs from the Groningen dialect in that the Standard Dutch empty determiner with this set of features is much more restricted. In chapter 7, we discussed two constructions in which this determiner appears. Sentence (13a) is a corpus sentence from Hoeksema (2000), illustrating the *feit is dat* ('fact is that')-construction. The superlative noun phrase *hoogste prioriteit* has a definite/specific semantics: the empty determiner introducing this noun phrase can be substituted by a definite article (cf. *de hoogste prioriteit* ('the highest priority')), but not by an indefinite article (cf. *een hoogste prioriteit* ('a highest priority')). The same holds for coordinated bare singular counts like *kat en hond* ('cat and dog') in (13b), which receive a definite/specific reading (cf. Heycock & Zamparelli 2003). Our conclusion is that Standard Dutch has a definite/specific empty determiner, which has much more restrictive selectional and distributional properties than the empty determiner in the Groningen dialect. In this chapter, I will not propose a new account of these constructions, but in 8.4.4.2 we will discuss and adopt Hoeksema's and Heycock & Zamparelli's accounts.

(13)   a.   *Hoogste prioriteit hebben het Damsterdiep tussen   de Oostersingel en*
            highest priority   have   the Damsterdiep between the Oostersingel and
            Steentilstraat (. . .) en   het Boterdiep.
            Steentilstraat   and the Boterdiep
            'The Damsterdiep between the Oostersingel and the Steentilstraat (. . .)
            and the Boterdiep have the highest priority.'

b. *Kat en hond waren even vies.*
   'Cat and dog   were   equally filthy.'

We have discussed the idea that there are three types of empty determiners, corresponding to the interpretations presented in table 8.1. The symbol '0' represents the null pronunciation of the relevant determiners. For example, 0[+R] symbolizes an empty determiner with the value [+R].

Table 8.1 Types of empty determiners

0[+R]	(kind-)referential interpretation
0[−R]	variable-introducing/indefinite interpretation
0[−R, ι]	definite/specific interpretation

8.3   Selectional properties of empty determiners

In section 7.3.3, we argued against Longobardi's account of the ill-formedness of sentences like (14a). Longobardi (1994: 633) accounts for the ill-formedness of such sentences by assuming that the empty determiner "seems to impose quantification over subparts and exclude quantification over individuals whenever the head noun following it is in the singular". Such an account in terms of the quantificational properties of the determiner does not predict that (14b), which does not express quantification over dodos, is ill-formed as well.

(14)   a.   **Ik vond vriend.*
            I   found friend
       b.   **Dodo is uitgestorven*
            dodo is extinct

On the basis of this objection, we argued in favour of a purely syntactic approach. Such an account is suggested by Adger (2003). Adger (2003: 258–259) observes: "We have now seen (. . .) examples of covert (that is, silent (. . .)) determiners: one is found with plural nouns (. . .). We have also seen that it is impossible to have a null determiner with singular nouns like *letter* (. . .). We do, however, find a singular null determiner with (. . .) mass nouns."

Adger (2003: 259) recognizes that the impossibility to have a null determiner with singular nouns like *letter* is a purely English-specific fact. He writes: "There are other languages which allow null Ds to appear with singulars [i.e., singular count nouns]." Here, Adger accounts for the fact that determinerless nouns such as *letter* are unacceptable by simply assuming that English does not possess a singular empty determiner with count nouns. Other languages (for example the Groningen

dialect) can have a singular empty determiner with count nouns. In this section, we will pursue this line of thought.

In the passages cited, Adger distinguishes three empty determiners: an empty determiner selecting singular count nouns, an empty determiner selecting singular mass nouns and an empty determiner selecting plural nouns. I assume that these three types of determiners can be described by assuming the following features: [±count], [±pl]. Determiners with the features [−count, −pl] introduce singular mass DPs, determiners with [+count, +pl] introduce plural count DPs and determiners with [+count, −pl] introduce singular count DPs.

In order for the derivation to converge, the features [±count] and [±pl] on determiners must agree with the corresponding features on the NP, i.e., the sister of the determiner.

The conclusions drawn in 8.2.2 complicate this picture: On the basis of the semantics of empty determiners, we have argued that there are three types of empty determiners: 0[+R], 0[−R] and 0[−R, ι]. Combining the feature bundles [−count, −pl], [+count, +pl] and [+count, −pl] with [+R], [−R] and [−R, ι] leads to nine possible combinations. These are presented in table 8.2.

Adger (2003: 261) assumes that "when we talk about null Ds, (. . .) what we are really saying is the following: the spellout rules for particular feature bundles result in a null phonology". Six of the nine feature bundles presented in table 8.2 actually correspond to empty determiners in Standard Dutch. This means that in Standard Dutch there are six combinations of features for which spell out rules (can) result in null phonology. The relevant combinations are: [+R, −count, −pl], [+R, +count, +pl], [−R, −count, −pl], [−R, +count, +pl], [−R, ι, +count, −pl] and 0[−R, ι, +count, +pl]. Example sentences are presented in (15)–(20).

The sentences in (15)–(18) contain DPs that are introduced by 0[+R, −count, −pl], 0[+R, +count, +pl], 0[−R, −count, −pl] and 0[−R, +count, +pl], respectively (i.e., by empty determiners with the corresponding feature bundles). Recall from chapter 7 that the acceptability of sentences like (15) and (16) is subject to inter-speaker variation. This can be dealt with by assuming that a number of varieties and idiolects do not have the relevant determiners.

Table 8.2 Possible combinations of features on empty determiners

	[−count, −pl]	[+count, −pl]	[+count, +pl]
[+R]	[+R, −count, −pl] (cf. (15))	[+R, +count, −pl]	[+R, +count, +pl] (cf. (16))
[−R]	[−R, −count, −pl] (cf. (17))	[−R, +count, −pl]	[−R, +count, +pl] (cf. (18))
[−R, ι]	[−R, ι, −count, −pl](cf. (21a))	[−R, ι, +count, −pl] (cf. (19), (21b))	[−R, ι, +count, +pl] (cf. (20), (21c))

(15) *%<u>Dopheide</u> is in dit gebied bijna uitgestorven.* (cf. (62b), chapter 7)
     heather   is in this area   nearly extinct
     'In this area, heather is nearly extinct.'

(16) *%<u>Tijgers</u> worden met uitsterven bedreigd.* (cf. (10))

(17) *Ik prefereer <u>Iers bier.</u>* (cf. (68b), chapter 6)
     'I prefer   Irish beer.'

(18) *Deze stroper haat <u>zeehonden.</u>* (cf. note 5, chapter 6)
     'This poacher hates seals.'

In (19) and (20), Standard Dutch sentences are presented in which DPs are introduced by the determiners 0[–R, ι, +count, –pl] and 0[–R, ι, +count, +pl], respectively.

(19)   *<u>Hoogste prioriteit</u> hebben het Damsterdiep tussen de Oostersingel en*
       Steentilstraat. (cf. (13a))

(20)   *<u>Vader en zoon</u> waren overgelukkig.*[2]
       'Father and son   were blissfully happy.'

The empty determiners in (19) and (20) differ from the ones in (15)–(18) because they have a very limited distribution in Standard Dutch (cf. 8.2.2 and 8.4.4 for some discussion). We follow Heycock & Zamparelli (2003) in assuming that coordination of singular count nouns like in (20) involves coordination of two (or more) NPs. The resulting coordinated structure subsequently raises to the specifier of a DP headed by an empty determiner. Let us assume that this determiner can be equated with 0[–R, ι, +count, +pl] (i.e., a plural empty determiner with the features [–R, ι]). In this way, we predict that it agrees with a plural auxiliary (*waren* in (20)), which is the desired prediction.[3]

In the Groningen dialect, the empty determiners 0[–R, ι, +count, –pl] and 0[–R, ι, +count, +pl] do not have this very limited distribution. Some example sentences are presented in (21a) and (21b).

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2. The sentence originates from http://www.beleven.org/verhaal/de_beproeving_van_ abraham (July 2006).

3. Sentences like (20) illustrate that two singular NPs can become plural as a consequence of conjunction. Hoeksema (1983: 74) observes that "[t]his is the case for so-called "referring expressions" like proper names and definite descriptions (cf. *Sue and Janet walk (*walks)*, *The King and I are friends*, *This boy and that girl were elected*, etc.) but also for existential NPs beginning with *a* or *one* (*A griffin and a unicorn were sitting on the lawn*)." The coordinated NPs in (20) fall into the category of "definite descriptions". Hoeksema presents a semantic account of the commonalities of the relevant quantifiers. A discussion of the relation between plurality and conjunction is beyond the scope of this chapter. I refer the reader to Hoeksema (1983).

(21) a. *Man het geliek.*   (cf. (11a))
      b. *Ik heb maaiden zain.*
          I   have lasses   seen
          'I have seen the lasses.'
      c. *Guster   heb ik melk dronken.*
          yesterday have I   milk drunk
          'Yesterday, I drunk the/that milk.'

Sentence (21a) receives a definite/specific interpretation, which corresponds to the feature bundle [–R, ι, +count, –pl]. Sentence (21b) can get a definite/specific interpretation as one of its readings. Under this interpretation, the DP is introduced by 0[–R, ι, +count, +pl]. Sentence (21c) contains an example of a DP introduced by the empty determiner 0[–R, ι, –count, –pl].

On the basis of these assumptions, we can now provide a description of the selectional properties of empty determiners. We have proposed that Standard Dutch possesses the empty determiners presented in (22a–f).

(22)   Empty determiners in Standard Dutch:
       a.   0[+R, –count, –pl]   (cf. sentence (15))
       b.   0[+R, +count, +pl]   (cf. sentence (16))
       c.   0[–R, –count, –pl]   (cf. sentence (17))
       d.   0[–R, +count, +pl]   (cf. sentence (18))
       e.   0[–R, ι, +count, –pl]   (cf. sentence (19))
       f.   0[–R, ι, +count, +pl]   (cf. sentence (20))

       Empty determiners which are unavailable in Standard Dutch:
       g.   0[–R, +count, –pl]   (cf. sentence (23a))
       h.   0[+R, +count, –pl]   (cf. sentence (23b))
       i.   0[–R, ι, –count, –pl]   (cf. sentence (24))

This description predicts that Standard Dutch singular counts without overt determiners cannot receive the kind–Referential or the quantificational reading (in the sense of (9a)). The language simply does not have empty determiners to introduce such DPs (i.e., 0[–R, +count, –pl] and 0[+R, +count, –pl]). This prediction is borne out, as illustrated in (14), repeated as (23).

(23)   a.   *Ik vond vriend.*
       b.   *Dodo is uitgestorven.*

The differences between the Groningen dialect and Standard Dutch can be expressed by assuming that the Groningen dialect has a determiner 0[–R, ι, –count, –pl], which does not exist in Standard Dutch (cf. (22i)). This predicts that while in the Groningen dialect (21c) is acceptable under a definite/specific reading, a similar sentence in Standard Dutch would be unacceptable under this reading. Sentence (24) illustrates that this prediction is borne out. In Standard Dutch, this

sentence only receives an existential reading (suggesting that *melk* ('milk') is introduced by 0[–R, –count, –pl], cf. (22c)).

(24) #*Gisteren   heb   ik melk gedronken.*
        yesterday have I   milk drunk

Although Standard Dutch and the Groningen dialect both have empty determiners of the type [–R, ι, +count, –pl] and [–R, ι, +count, +pl], these determiners have a very limited distribution in Standard Dutch (cf. (19) and (20)).

A more detailed discussion of the distributional properties of empty determiners follows in 8.4; section 8.4.4 focuses on empty determiners receiving a definite/specific interpretation.

8.4   Distributional properties of empty determiners

In this section, the syntactic distribution of empty determiners will be accounted for. Section 8.4.1 is devoted to the distributional properties of 0[+R, +count, +pl], i.e., the empty plural determiner introducing kind–Referential DPs. Section 8.4.2 is concerned with the syntactic distribution of 0[+R, –count, –pl], i.e., the empty mass determiner introducing kind–Referential DPs. In 8.4.3, we will discuss the distributional properties of empty articles with the feature [–R], i.e., 0[–R, –count, –pl] and 0[–R, +count, +pl]. Section 8.4.4 is devoted to empty determiners with [–R, ι], i.e., 0[–R, ι, +count, –pl], 0[–R, ι, +count, +pl] and 0[–R, ι, –count, –pl].

8.4.1   Distributional properties of 0[+R, +count, +pl]

8.4.1.1   *Describing distributional restrictions*
The empty determiner with the specification [+R, +count, +pl] introduces plural DPs with a kind–Referential interpretation. The bare plural DP *tijgers* ('tigers') in sentence (10), repeated as (25), is an example of a DP introduced by this empty determiner.

(25) %*Tijgers worden met uitsterven bedreigd.*

The distribution of kind–Referential bare plurals is restricted: Standard Dutch sentences such as (26), in which a bare plural is used in the direct object position of a kind predicate, are unacceptable under the ordinary kind–Referential interpretation of the bare plural.

(26) #*Edison heeft gloeilampen uitgevonden.*

The fact that sentence (26) is semantically ill-formed is one of the illustrations of the fact that empty determiners are typically subject to distributional restrictions. This is captured by the generalization in (27). Notice that (27) leaves open the possibility that the relevant set X in some cases corresponds to the empty set.

(27)   The distribution of a determiner D with null pronunciation is limited by the fact
        that there is a set of syntactic heads X by which D may not be governed.[4]

8.4.1.2 *Standard Dutch*

The distribution of empty determiners can be described by specifying the set
of heads X by which D may not be governed. As we observed, Standard Dutch
empty determiners introducing kind-referential DPs are not acceptable in the di-
rect object position. This position is governed by the verbal head V (cf. for ex-
ample Chierchia 1998: 356, Vicente 2005). We conclude that the set of heads X for
Standard Dutch 0[+R, +count, +pl] contains the head V.

(28)   Standard Dutch 0[+R, +count, +pl] may not be governed by the following
        set of heads: {V, . . .}

Things are, however, more complicated than this. In chapter 6, we found that
there are speakers of Dutch who accept neither sentence (26) nor the sentences in
(29). The bare plurals in (29) are governed by a prepositional head P corresponding
to *van* ('of').[5]

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4.   A range of definitions of 'government' have been proposed in the (Government and Binding)
literature, with different empirical predictions (cf. for example Haegeman 1994 & Chomsky 1995:
78–91 for discussions of *government* as a notion in the Principles and Parameters framework). These
definitions differ in whether government is defined in terms of c-command or m-command.

    In the Minimalist Program (cf. Chomsky 1995), the mechanism of government has
been abandoned. I refer the reader to, for example, Lasnik & Uriagereka with Boeckx (2005:
128–132) for some argumentation against the notion of government. In the recent literature,
some attempts can be found to define similar configurational notions. For example, De Crousaz &
Shlonsky (2003: note 5) write: "There is no need, however, to invoke Government as a distinct con-
figuration, since it is already defined by the conjunction of c-command and a locality constraint
[i.e., the absence of an intervening or closer c-commanding head]."

    In this study, I do not intend to enter the theoretical discussion about the notion of government.
The basic intuition behind the notion of government used in this study is simple: a head governs its
sister (cf. Lasnik & Uriagereka with Boeckx 2005: 129). The relations which are referred to in this
chapter as government relations are such relations between a head and its sister.

5.   Both sentences in (29) are rather similar. In both sentences, the preposition *van* ('of') occurs
and it is not used in its lexical sense (cf. also the discussion in chapter 6). Unfortunately, it is dif-
ficult to construct example sentences in which other prepositions occur and in which the bare
plural governed by the relevant preposition (unambiguously) receives a kind-referential read-
ing. Recall that sentences like (i) correspond to characterizing readings in which the bare plural
does not (necessarily) denote a kind.

    i.   *Ik heb een hekel aan   katten.*
          'I   dislike   PREP cats.'

(29) a. *%Bell is de uitvinder van telefoons.*
          Bell is the inventor of   telephones
          'Bell is the inventor of the telephone.'
      b. *%De evolutie   van ijsberen   is het bestuderen waard.*
          the evolution of   polar bears is the studying   worth
          'The evolution of the polar bear is worth studying.'

Recall that there is no doubt that sentences like those in (30) are acceptable under a characterizing reading of the bare plural (cf. also note 5).

(30) a. *Het doden van ongeboren kinderen is in Ierland verboden.*
            the killing of   unborn   children is in Ireland forbidden
            'In Ireland, the killing of unborn children is forbidden.'
      b. *Het brullen van tijgers is diep en   machtig.*
            'The roaring of   tigers is deep and mighty.'

So, there are (at least) three varieties of Standard Dutch. Two of these varieties are described in (31).

(31) Standard Dutch 0[+R, +count, +pl] may not be governed by the following
      set of heads X:
      a. Variety: X = {V}
      b. Variety: X = {V, P}

In these two varieties, sentences like (25) are acceptable, i.e., the kind reading is available to bare plurals. Yet, in certain positions bare plurals are unacceptable under this reading. The set in (31a) corresponds to varieties in which bare plurals are unacceptable in direct object position. In such varieties, the sentences in (29) are acceptable and (26) is unacceptable. (31b) corresponds to varieties in which the sentences in (29) as well as (26) are unacceptable.

The third variety is the variety that does not possess an empty determiner with the value [+R, +count, +pl]. In the latter variety, bare plurals are unacceptable under kind-referential readings in every syntactic position.[6]

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6.   In this way, we have presented a negative formulation of the restrictions on kind-referential bare plurals. Thus, we are able to describe the distributional facts about Dutch bare plurals. In the rest of this chapter, we account for the distribution of other types of bare arguments in a similar way. Note that in the literature the conditions on empty categories are positively defined: the lexical government requirement states that empty determiners are licensed if they are governed by a suitable (i.e., a lexical) head. However, this study makes clear that the conditions on empty determiners are much more complicated than is usually assumed.

8.4.1.3 *Local varieties of Dutch*

We will now discuss the distributional properties of 0[+R, +count, +pl] in local varieties of Dutch (and Frisian) (cf. 5.5.3.3.1 for a presentation of the results). The three relevant sentences from the questionnaire are presented in (32).

(32) a. *%#Telefoons   zijn uitgevonden door een Schot.*
        telephones are invented   by a Scotsman
        'Telephones were invented by a Scotsman.'
    b. *%#Die Schotse leraar   heeft telefoons   uitgevonden.*
        that Scottish teacher has   telephones invented
        'That Scottish teacher invented the telephone.'
    c. *%#Ik heb hier een foto   van de uitvinder van telefoons.*
        I have here a   picture of the inventor of telephones
        'I have a picture of the inventor of the telephone here.'

In (32a), the bare plural is used in the subject position of a passive sentence. We follow the standard assumption that "[p]assives are alternants of (. . .) their active counterparts (. . .) where the object comes to be in the structural subject position" (cf. Adger 2003: 229).[7] In (32b), the bare plural is used in direct object position. In (32c), it is used in the complement position of a postnominal PP. In each sentence, the linguistic context enforces a kind reading.

On the basis of acceptability judgements assigned to these sentences, five groups of varieties can be distinguished (cf. section 5.5.3.3.1). These groups are presented in (33).

(33) a. Group 1: (32a) and (32c) are acceptable, (32b) is unacceptable.[8]
    b. Group 2: (32a) is acceptable, (32b) and (32c) are unacceptable.[9]
    c. Group 3: (32c) is acceptable, (32a) and (32b) are unacceptable.[10]
    d. Group 4: (32a), (32b) and (32c) are acceptable.[11]
    e. Group 5: (32a), (32b) and (32c) are unacceptable.[12]

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7. It would have been interesting to investigate the acceptability judgements of active sentences in which predicates like *uitgestorven zijn* ('be extinct'), which select kind-denoting subjects, are attributed to DPs with empty determiners. Unfortunately, in most dialects such kind predicates do not have natural equivalents (cf. chapter 5).

8. This is the case in the varieties spoken in Rotterdam and Gingelom.

9. This is the case in the varieties spoken in Oldebroek, Herdersem, Aalter and Klemskerke.

10. This is the case in the varieties spoken in Norg, Nijverdal, Blokker and Wouwse Plantage.

11. This is the case in the varieties spoken in Uithuizen and Hellendoorn.

12. This is the case in the varieties spoken in Genemuiden, Scherpenzeel, Vlaardingen, Ellewoutsdijk, Montfort, Valkenburg, Zandvliet, Nieuwkerken-Waas and Diksmuide.

This section discusses how the description of the distributional properties of empty determiners suggested in 8.4.1.1 and 8.4.1.2 can deal with this variation.

Varieties belonging to group 1 can be treated on a par with the Standard Dutch variety in (31a). This is presented in (34a) below.

Local varieties belonging to group 2 pattern with the Standard Dutch variety in (31b). This is presented in (34b).

The fact that in the varieties in groups 1 and 2 sentence (32b) is unacceptable and (32a) is acceptable has implications for the level of the derivation at which the restrictions in (34a) and (34b) are evaluated. These restrictions do not have to be fulfilled at the level where the DPs that end up in the structural subject position are still in their VP-internal base position. In their base position, these bare plural DPs are governed by the verbal head. If (34a) and (34b) were evaluated at this level of the derivation, (32a) would be predicted to be unacceptable, which is not the desired result. We conclude from this that in the varieties in groups 1 and 2, the restrictions in (34a) and (34b) have to be fulfilled at a later stage of the derivation. Our hypothesis is that in such varieties (34a) and (34b) are evaluated at the point of Spell-Out (where the structure already formed is sent off to Phonological Form).[13]

We can describe varieties belonging to group 3 by assuming that DPs introduced by the empty determiner 0[+R, +count, +pl] may not be governed by the verbal head. This situation corresponds to (34c). Note that even though the set of heads X is the same for groups 1 and 3, the two groups differ in the acceptability of sentence (32a). A suggestion to account for this is that in group 3 the restriction that 0[+R, +count, +pl] may not be governed by a head V must be fulfilled during the whole derivation. As a consequence, DPs introduced by 0[+R, +count, +pl] cannot be merged with the head V. This predicts that both (32a) and (32b) are unacceptable, which is the desired result.[14]

Varieties in group 4 can be described by assuming that the set X of heads (cf. (27)) is empty, which boils down to saying that the distribution of 0[+R, +count, +pl] is not restricted. This situation is presented in (34d).

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13.   For Standard Dutch 0[+R, +count, +pl], we have not specified at which level(s) of the derivation the restrictions in (31) must be fulfilled. In this book, we have not investigated acceptability judgements of kind-referential bare noun phrases in the subject position of passive sentences in Standard Dutch. Evidence about the acceptability scores of such sentences would make it possible to draw conclusions about the level of derivation at which (31) is relevant.

14.   These assumptions account for the results of the questionnaire study. In future research, it would be interesting to cover other syntactic positions and functions, such as indirect objects and subjects of active sentences (but cf. note 7). Data of future research might lead to more extensive sets of heads X.

(34)   In local varieties of Dutch (and Frisian), 0[+R, +count, +pl] may not be
       governed by the following sets of heads X:
       a.   Group 1: X = {V}   (to be fulfilled at Spell-Out)
       b.   Group 2: X = {V, P}   (to be fulfilled at Spell-Out)
       c.   Group 3: X = {V}   (to be fulfilled at every stage of the derivation)
       d.   Group 4: X = Ø

In group 5, none of the sentences in (32) is acceptable. Hence, there is no indi-
cation that such varieties possess an empty determiner with the value [+R, +count,
+pl]. We assume that varieties of group 5 do not possess 0[+R, +count, +pl]. This
is presented in (35).

(35)   Group 5 does not possess 0[+R, +count, +pl]

We could make some further generalizations about the data in (33) and the
description in (34) and (35). There is, for example, no group of varieties in which
only sentence (32c) is unacceptable: if (32c) is unacceptable in a variety, then (32b)
is unacceptable as well. However, we have to be careful in making such generaliza-
tions. The problem is that the fact that we have not yet found varieties in which
only (32c) is unacceptable does not exclude the possibility that there are such dia-
lects. There is one informant who finds (32c) (slightly) more unacceptable than
(32b) (cf. table 8.3). As described in note 9, we assume that the judgements of
this informant correspond to group 2 in (33b), in which both (32b) and (32c) are
(relatively) unacceptable. However, it might be the case that there are informants
for which we have no data in which the difference in acceptability between (32b)
and (32c) is larger.

An unanswered question is: Why do many speakers judge kind-referential bare
plurals to be acceptable only in some of the positions under consideration? This
question is difficult to answer, since each group of varieties has its own distributional
restrictions and it is almost impossible to establish a clear pattern in the data.

The underlying reason why in some positions a kind-referential DP cannot
be introduced by an empty determiner might be that an empty determiner can-
not mark the noun phrase as being a topic (cf. for example Behrens 2005 on the
relation between topicality and definiteness). In the literature, it has been argued

Table 8.3 The acceptability judgements for the variety spoken in Aalter (no. 26)

sentence↓ variety→	Aalter (no. 26)
(32a) Telefoons zijn uitgevonden door een Schot.	5
(32b) Die Schotse leraar heeft telefoons uitgevonden.	2
(32c) Ik heb hier een foto van de uitvinder van telefoons.	1

that there is a strong relation between kind reference and topichood. For example, Behrens (2005) posits a feature TOPIC and claims that this feature is part of the feature specification of kind-referential DPs (cf. also Lee 1995). A DP can be marked as such by inserting a definite article. A hypothesis to account for the fact that many speakers judge kind-referential bare plurals to be acceptable only in some positions is that in these idiolects or varieties, it depends on the syntactic position of the DP whether it is necessary to mark the DP as a topic.

In the previous section, we observed that if speakers of Standard Dutch judge bare plurals to be acceptable under kind readings, then they always judge them acceptable in subject position. What makes subjects special in this respect? In the literature, it has often been observed that there is a strong link between subject-hood and topichood. Behrens (2005: note 19), for example, makes the following suggestion: "In European languages, TOPIC are normally realized as grammatical subjects." Subject noun phrases can therefore very easily be identified as topics, independently of whether or not a definite article is used. Possibly, this is why kind-referential subject DPs do not have to be introduced by a definite article.

However, this does not explain why in some local varieties of Dutch bare plurals are acceptable only in the position illustrated in (32c). The data of the questionnaire study cannot easily be captured in a more explanatory way than presented in (34) and (35).

8.4.2   Distributional properties of 0[+R, −count, −pl]

8.4.2.1   *Standard Dutch*
This section describes the distributional properties of the type of empty determiner that introduces singular mass DPs. An example sentence was presented in (15), repeated as (36).

(36) %#*Dopheide is in dit gebied bijna uitgestorven.*

In chapter 6, we saw that the acceptability of such sentences is subject to inter-speaker variation. There are speakers who consider such sentences unacceptable. We can account for varieties (of Standard Dutch) in which sentences like (36) are unacceptable by assuming that such varieties do not possess an empty determiner with the value [+R, −count, −pl].

In chapter 6, we also discussed the acceptability of mass DPs introduced by the empty determiner of the type [+R, −count, −pl] in sentences such as (37).

(37)   a. %#*Vlaamse monniken hebben bier uitgevonden.*
            Flemish monks   have   beer invented
            'Flemish monks invented beer.'
    b. %#*Die   man is de uitvinder van marsepein.*
            'That man is the inventor of   marzipan.'

In (37a), *bier* occurs in direct object position and in (37b) *marsepein* occurs in the complement position in a postnominal PP. Some of the speakers who accept (36) do not accept (37a) and (37b). There is another group of speakers who judge (36) as well as both sentences in (37) acceptable.

How can the inter-speaker variation with regard to (36) and (37) be described? In one variety, sentence (36) is acceptable, while the sentences in (37) are unacceptable. This variety corresponds to the set X in (38a). In the second variety, both (36) and (37) are acceptable. This variety can be described by the generalization in (38b).

(38)   Standard Dutch 0[+R, –count, –pl] may not be governed by the following sets of heads X:
   a.   Variety: X = {V, P}
   b.   Variety: X = Ø

Recall that there is a third variety, which does not have 0[+R, –count, –pl] (cf. above).

8.4.2.2   *Local varieties of Dutch*

The results of the questionnaire study presented in chapter 5, section 5.5.3.3.5, shed some light on the distribution of DPs introduced by the empty determiner of type [+R, –count, –pl] in local varieties of Dutch (and Frisian). This empty determiner introduces kind-referential singular mass DPs. The relevant sentences from the questionnaire study are presented in (39).

(39)   a.   *Koffie is uitgevonden door de Arabieren.*
           coffee is invented   by   the Arabs
           'Coffee was invented by the Arabs.'
       b.   *Die Duitse   banketbakker heeft marsepein uitgevonden.*
           that German confectioner has   marzipan   invented
           'That German confectioner invented marzipan.'
       c.   *Hij vertelde een verhaal over   de uitvinder van marsepein.*
           'He told   a   story   about the inventor of   marzipan.'

In (39a), the relevant DP appears in the subject position of a passive sentence. In (39b), the DP is in direct object position. Sentence (39c) contains a mass DP with an empty determiner in the complement position of the preposition *van* ('of').

On the basis of the judgements assigned to these sentences, four groups of varieties can be distinguished (cf. table 5.22 in section 5.5.3.3.5). These are presented in (40).

(40)   a.   Group 1: (39a) and (39c) are acceptable, (39b) is unacceptable.[15]
        b.   Group 2: (39a) is acceptable, (39b) and (39c) are unacceptable.[16]
        c.   Group 3: (39a), (39b) and (39c) are acceptable.[17]
        d.   Group 4: (39a), (39b) and (39c) are unacceptable.[18]

The acceptability of the sentences in (39) can be described by the restrictions in (41) and (42).

(41)   In local varieties of Dutch and Frisian, 0[+R, −count, −pl] may not be governed by the following sets of heads X:
        a.   Group 1: X = {V}   (to be fulfilled at Spell-Out)
        b.   Group 2: X = {V, P}   (to be fulfilled at Spell-Out)
        c.   Group 3: X = ∅

(42)   Group 4 does not possess 0[+R]

Restrictions (41a) and (41b) must be fulfilled at Spell-Out. At Spell-Out the subject of a passive sentence is in the structural subject position, Spec,TP (cf. Zwart 2003–2004, but see Van Craenenbroeck & Haegeman 2007 for an alternative approach). In this position, the DP is not governed by V. Thus we predict (39a) to be acceptable in groups 1 and 2.

Note that we do not treat empty determiners introducing plurals on a par with empty determiners introducing mass DPs. We assume that *telefoons* ('telephones') in (32a), repeated as (43a), and *koffie* ('coffee') in (39a), repeated as (43b), are introduced by different types of determiners: plural DPs contain 0[+R, +count, +pl] and mass DPs contain 0[+R, −count, −pl].

(43)   a. *%#Telefoons zijn uitgevonden door een Schot.*
        b. *%#Koffie is uitgevonden door de Arabieren.*

This assumption leads to the following prediction: plural DPs such as *telefoons* ('telephones') and mass DPs such as *koffie* ('coffee') do not necessarily have the same syntactic distribution. This prediction is borne out. We found that in most

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15.   This is the case in the varieties spoken in Genemuiden, Nijverdal, Blokker and Rotterdam.

16.   This is the case in the varieties spoken in Klemskerke and Zandvliet.

17.   This is the case in the varieties spoken in Uithuizen, Holwerd, Norg, Hellendoorn, Borculo, Scherpenzeel, Wouwse Plantage, Valkenburg, Val-Meer, Gingelom, Wambeek, Herdersem, Maldegem, Aalter and Diksmuide.

18.   This is the case in the varieties spoken in Oldebroek, Vlaardingen, Ellewoutsdijk, Montfort, Ternat and Nieuwkerken-Waas.

varieties,[19] the syntactic distribution of plural DPs with empty determiners differs from the distribution of mass DPs with empty determiners. A salient point in this respect is that we found a number of varieties in which plurals with empty determiners are acceptable only in the complement position of the preposition *van* ('of') (cf. (33c) in section 8.4.1.3). This distribution is not found with mass DPs introduced by empty determiners in any local variety under investigation (cf. (41)).

8.4.3 Distributional properties of 0[–R, –count, –pl] and 0[–R, +count, +pl]

This section discusses the distribution of determiners with value [–R]. We have encountered two empty determiners with this value: 0[–R, –count, –pl] and 0[–R, +count, +pl]. On the basis of our findings, there is no indication that these determiners have different distributional properties. Therefore, the following sections are devoted to both types of determiners.

8.4.3.1 *Standard Dutch*

In chapter 6, we argued that sentences like (8), repeated as (44), and (45) are ambiguous.

(44) *Tijgers leiden een solitair bestaan.*

(45) *Melk is gezond.*
'Milk is healthy.'

One of the readings of these sentences is a characterizing reading in which the bare argument in subject position does not refer to a kind. In this interpretation, the empty determiners introducing *ijsberen* ('polar bears') and *melk* ('milk') have the value [–R]: the DP introduces a variable, which is bound by the generic operator.

There is no indication that the distribution of such empty determiners with value [–R] is restricted. In (46) and (47), examples are presented of such determiners in other positions than the subject position. Sentence (46a) is repeated from (18); (47a) is repeated from (17).

(46) a. *Deze stroper haat zeehonden.*
    b. *De poten van ijsberen zijn dichtbehaard.*
       'The paws of polar bears are densely hairy.'

(47) a. *Ik prefereer Iers bier.*
    b. *Hij verafschuwt de geur van kaas.*
       'He detests the smell of cheese.'

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19. This is the case in the varieties spoken in Holwerd, Norg, Genemuiden, Nijverdal, Borculo, Scherpenzeel, Blokker, Wouwse Plantage, Valkenburg, Val-Meer, Ternat, Wambeek, Zandvliet, Herdersem, Aalter and Diksmuide.

Speakers of Standard Dutch agree that such sentences are acceptable.

The sentences presented here illustrate that the set of heads X that may not govern Standard Dutch empty determiners with the feature [−R] is empty, as specified in (48).[20]

(48)   0[−R] may not be governed by the following sets of heads X:
        Standard Dutch: X = Ø

8.4.3.2 *Italian*

In the previous section, we showed that in Standard Dutch empty determiners with the value [−R] have a free syntactic distribution. In other languages, the distribution of such determiners is more restricted. This section is devoted to the distributional properties of empty determiners with [−R] in Italian, where they have a restricted distribution.

In chapter 7, we discussed the distribution of Italian empty determiners in Italian. In (49) and (50), some example sentences from Chierchia (1998: 356, 384) and Longobardi (1994: 616) are presented.

(49)   a.   *Bambini sono venuti da noi.*
              kids   have come by us
        b.   *In questo ufficio marocchini telefonato sempre.*
              in this   office Moroccans call up   always

(50)   a.   *Ho preso biscotti con il   mio latte.*
              I   had   cookies with the my milk
              'I had cookies with my milk.'
        b.   *Ho preso acqua dalla   sorgente.*
              'I   took water from the spring.'

The sentences in (49) are unacceptable, which illustrates that Italian DPs introduced by empty determiners cannot occur in subject position. The sentences in (50) are acceptable under an existential reading of *biscotti* ('cookies') and *acqua* ('water'). This illustrates that Italian does possess empty determiners with the value [−R], but they have a limited distribution.

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20.   In chapter 5, we found that in local varieties of Dutch sentences like (44) and (45) are, in general, fully acceptable. However, the questionnaire that was used in the study does, however, not contain sentences such as (46a) and (47a). This was due to the fact that in many dialects predicates such as *haten* ('hate'), which enforce a characterizing reading of the direct object, do not have natural equivalents. On the basis of the results of the questionnaire study, we cannot draw conclusions about the distribution of 0[−R] in local varieties of Dutch.

Note that sentences like (51) (from Longobardi 1994: 612) illustrate that Italian does not have an empty determiner of the type [−R, +count, −pl], i.e., a singular count determiner with value [−R].

(51)   *Ho incontrato *(un/il) grande amico di Maria ieri.*
       I   met   (a/the) great   friend of Maria yesterday

The limited distribution of empty determiners with the feature [−R] can be described by assuming that 0[−R] may not be governed by a functional head. This is presented in (52).

(52)   0[−R] may not be governed by the following sets of heads X:
       Italian: X = the set of functional heads

This restriction captures the distribution of 0[−R, −count, −pl] and 0[−R, +count, +pl].

Longobardi (1994) claims that Italian DPs with empty determiners unambiguously receive existential readings. This could be a problem for the description presented here: It is not clear why it should be impossible for DPs introduced by [−R] determiners to be bound by GEN. Fortunately, Longobardi (2001: 347) observes that sentences like (53) are in fact well-formed (under a characterizing reading of the bare plural). The generalization in (52) correctly predicts that sentences like this are acceptable.

(53)   *Amo/Adoro/Mi piacciono arance di grandi dimensioni.*
       'I love/adore/like oranges of large size.'

8.4.4   Distributional properties of 0[−R, ι, +count, −pl], 0[−R, ι, +count, +pl] and 0[−R, ι, −count, −pl]

8.4.4.1   *Groningen dialect*

In the dialects spoken in (a large part of) the province of Groningen, DPs with empty determiners are generally acceptable under the definite/specific interpretation. This is illustrated in (54), (55) and (56).

(54)   a.   *Man het geliek.*
       b.   *Jong het bok verkòft.*
            boy   has goat sold
            'The/That boy has sold the/that goat.'
       c.   *'t   brood is in ovent.*
            the bread is in oven
            'The bread is in the oven.'

(55)   a.   *Wichter hemmen der veur die west.*
            girls   have   here for   you been
            'The girls were here for you.'

      b.   *Ik heb <u>maaiden</u> zain.*

      c.   *Jonges stoan(en)   noast   <u>wichter</u>.*
          boys   stand-(3pl) next to girls
          'The boys stand next to the girls.'

(56)   a.   *<u>Sukker</u> staait ien kaast.*
          sugar   is   in   cupboard
          'The sugar is in the cupboard.'

      b.   *Guster heb ik <u>melk</u> dronken.*

      c.   *Peber   staait noast   <u>zòlt</u>.*
          pepper is   next to salt
          'The pepper is next to the salt.'

(54a), (55b) and (56b) are repeated from (21). The sentences in (54) originate from ter Laan (1953). The sentences in (55) and (56) are considered acceptable by a speaker of the Uithuizen dialect.

    There is no indication that in the Groningen dialect the syntactic distribution of definite/specific DPs with empty determiners is limited. Neither ter Laan (1953) nor the informant from Uithuizen report that their distribution is restricted. Such DPs have a rather free distribution, as illustrated in (54), (55) and (56). This is captured in (57).

(57)   0[−R, ι] may not be governed by the following set of heads X:
      Groningen dialect: X = Ø

8.4.4.2   *Standard Dutch*

In Standard Dutch, singular count DPs without an overt determiner are ill-formed in sentences like (58a). Sentences like (58b) and (58c), where plural and mass DPs with empty determiners are used, are well-formed. However, these DPs receive indefinite/variable-introducing readings (cf. (9a)) or kind readings (cf. (9b)).

(58)   a.   **Man heeft gelijk.*
          man is   right

      b.   *#Mannen hebben gelijk.*
          men   are   right
          'The men are right.'

      c.   *#Soep is lekker.*
          soup is tasty
          'The soup is tasty.'

The definite/specific reading is not available for these DPs.

    As was mentioned in sections 8.2.2 and 8.3, there are some constructions in which DPs without overt determiners are acceptable under the definite/specific interpretation. A first construction is illustrated in (59). The coordinated structures

in these sentences receive definite/specific interpretations, just like the DPs without overt determiners of the Groningen dialect, as discussed in the previous section. In section 8.3, following Heycock & Zamparelli (2003), we assumed that the examples in (59) involve coordination of two NPs and that the coordinated structure raises to the specifier position of a DP, headed by an empty determiner. Sentences like (59a) show that such a DP agrees with a plural auxiliary. Therefore, we assume that the underlined DPs in (59) are introduced by 0[−R, ι, +count, +pl] (i.e., a plural empty determiner with value [−R, ι]).

(59) a.   _Vader en zoon_ waren overgelukkig.[21]
           'Father and son   were   blissfully happy.'
      b.   _Gerrit Jan legde mes en vork neer._
           Gerrit Jan put   knife and fork down
           'Gerrit Jan put down (his) knife and fork.'
      c.   _(. . .) de (. . .) renovatie   van tuin en huis   kostte (. . .) een_
           '(. . .) The (. . .) renovation of   garden and house cost   (. . .) a
           flinke duit.
           pretty penny.'

The sentences in (59) show that the construction has a free syntactic distribution: Coordinated singular counts are allowed in subject position (cf. (59a)), direct object position (cf. (59b)) and in the complement position of the preposition _van_ ('of') (cf. (59c)). This is an indication that in Standard Dutch empty determiners with the feature bundle [−R, ι] are not restricted to a selection of syntactic positions. This generalization is presented in (60).

(60)   0[−R, ι] may not be governed by the following sets of heads X:
       Standard Dutch: X = ∅

Another construction in which DPs with empty determiners are acceptable under the definite/specific reading is the _feit is dat_-construction, which is illustrated in (61) (cf. (13a)).

(61)   _Hoogste prioriteit hebben het Damsterdiep tussen de Oostersingel en_
       Steentilstraat (. . .) en het Boterdiep.

We assume that DPs such as _hoogste prioriteit_ ('highest priority') are introduced by 0[−R, ι, +count, −pl] (i.e., a singular count empty determiner with value [−R, ι]).

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21. The sentences originate from http://www.beleven.org/verhaal/de_beproeving_van_ abraham (July 2006), Marxveldt, Cissy van. 1917. _Een zomerzotheid._ Amersfoort: Valkhoff & Co and www.elsevier.nl (July 2006).

How can the limited distribution of definite/specific DPs with empty determiners be described? Coordinated singular count nouns (cf. (59)), which are assumed to be introduced by empty determiners, are not restricted to a selection of syntactic positions. So, there is no set of heads by which empty determiners [–R, ι] can not be governed in principle. This is specified in (60). As a result, the limited syntactic distribution of Standard Dutch empty determiners with value [–R, ι] must be dealt with by assuming that they are subject to additional licensing conditions. Detailed accounts of the distributional restrictions on the constructions illustrated in (59) and (61) are presented by Heycock & Zamparelli (2003) and Hoeksema (2000), respectively.

Heycock & Zamparelli argue that the syntax of a structure like *vader en zoon* ('father and son') in (59a) can be represented as in (62).

(62)
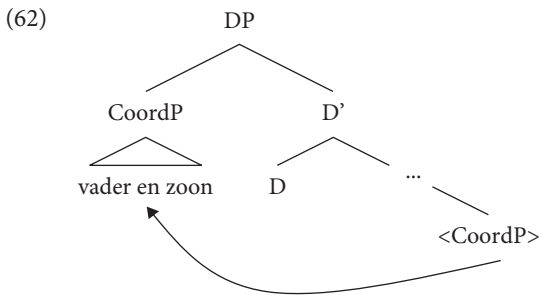
They assume that a construction like *vader en zoon* consists of two coordinated NPs, which is headed by the coordinator, in this case *en* ('and'). The resulting structure is referred to as a CoordP. This phrase is dominated by a DP with an empty head (i.e., an empty determiner). The CoordP moves to the specifier of this head. Heycock & Zamparelli (2003: section 4) claim that this configuration licenses the presence of the empty determiner: "[T]his movement is a way to license the empty D via spec[ifier]-head agreement with a quantificational operator, the conjunction head." We conclude from this that a first way to license empty determiners with value [–R, ι] is by specifier-head agreement with a conjunction head.

Hoeksema (2000) presents a description of the syntax of the *feit is dat*-construction. He proposes that nouns such as *feit* and *hoogste prioriteit*, which can be used in this construction, have a feature [TOP]. This feature is responsible for the obligatory topicalization of the relevant nouns to the topic position, which Hoeksema identifies as the specifier of CP (cf. Chomsky 1986).[22] Hence, a second

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22. This description is somewhat simplified. The feature [TOP] is a necessary condition for a noun to be allowed in the construction, but it is not a sufficient condition. Hoeksema (2000) notes that superlatives such as *hoogste prioriteit* are remarkably well represented in his corpus.

way to license empty determiners with the value [–R, ι] is by the presence of a syntactic feature "TOP", which triggers topicalization of the relevant DP.

Our conclusion is that Standard Dutch is similar to the Groningen dialect in that the set of syntactic heads by which empty determiners with value [–R, ι] may not be governed is empty. This conclusion can be drawn from the sentences in (59). However, empty determiners with [–R, ι] have to fulfil additional licensing conditions. There are two possibilities to license empty determiners with the value [–R, ι]: they can be licensed by specifier-head agreement with a conjunction head or by the presence of a syntactic feature "TOP". Our conclusions are summarized in (63).

(63) a. 0[–R, ι] may not be governed by the following sets of heads X:
Standard Dutch/Groningen dialect: X = Ø
b. Standard Dutch 0[–R, ι] is subject to additional licensing conditions:
0[–R, ι] is licensed by specifier-head agreement with the conjunction head
and or by the presence of a syntactic feature "TOP".

8.5 Distributional and selectional properties of definite articles

In this section, we discuss the selectional and distributional properties of definite articles. DPs introduced by definite articles can receive definite/specific as well as kind-referential interpretations. This is illustrated in (64).

(64) a. *De tijger heeft strepen.*
'The tiger has stripes.'
b. *De tijger is vlees aan het eten.*
the tiger is meat eating
'The tiger is eating meat.'

The most natural reading of (64a) is an interpretation in which the DP *de tijger* ('the tiger') receives a kind reading. In (64b), *de tijger* receives a definite/specific interpretation.

In the previous sections, we assumed that kind-referential readings correspond to the feature [+R] on determiners and that definite/specific readings correspond to [–R, ι]. A logical assumption is that definite articles can bear these feature values as well. On the basis of the assumptions made in the previous sections, we present the combinations of features on definite articles in table 8.4.

Furthermore, many of the nouns used in the construction refer to a relation between discourse elements. Examples of such nouns are *reden* ('reason') and *aanleiding* ('occasion/reason'). So, there are a number of additional conditions that license this construction.

Table 8.4 Possible combinations of features on definite articles *de* (the-NN/PL) and *het* (the-N)

	[–count, –pl]	[+count, –pl]	[+count, +pl]
[+R]	[+R, –count, –pl]	[+R, +count, –pl]	[+R, +count, +pl]
[–R, ι]	[–R, ι, –count, –pl]	[–R, ι, +count, –pl]	[–R, ι, +count, +pl]

A restricted distribution is typically a property of empty determiners. The syntactic distribution of definite articles is not limited in the way that empty determiners are restricted. Therefore, most of the discussion below will be devoted to selectional properties.

Section 8.5.1 discusses distributional and selectional properties of *de/het* [–R, ι], i.e., definite articles of the type [–R, ι]. Section 8.5.2 is devoted to the properties of *de/het*[+R, +count, –pl], i.e., the singular definite article with the feature [+R], introducing count nouns. Section 8.5.3 discusses the properties of *de/het* [+R, +count, +pl], i.e., the mass definite article with the feature [+R]. In 8.5.4, the distributional and selectional properties of *de/het*[+R, –count, –pl], i.e., the plural definite article with the feature [+R] will be described.

8.5.1   Distributional and selectional properties of *de/het*[-R, ι]

In (65), (66) and (67), examples of definite/specific DPs with definite articles are presented. In (65), the definite articles introduce singular count nouns, while in (66) plural common nouns and in (67) mass nouns are used.

(65)   a.   *De stofzuiger   staat in de kast*.
             'The vacuum cleaner is   in the cupboard.'
       b.   *Ik zoek   de hond*.
             'I   am looking for the dog.'
       c.   *Het gezicht van de Italiaan sprak boekdelen.*
             'The face   of   the Italian spoke volumes.'

(66)   a.   *De Russen   kwamen binnen*.
             'The Russians came   in.'
       b.   *We maken de ruiten   schoon.*
             we make   the windows clean
             'We are cleaning the windows.'
       c.   *Het verblijf van de tijgers is modern.*
             'The habitat of   the tigers is modern.'

(67)   a.   *De spinazie is   geslonken.*
             'The spinach has shrunk.'

    b. *Ze   poetste   <u>het koper</u>.*
       'She polished the brass.'

    c. *De vervanging   van <u>het meubilair</u> is een prioriteit.*
       the replacement of   the furniture is a   priority
       'The replacement of the furniture is a priority.'

These sentences show that such articles have a rather free syntactic distribution. Furthermore, they can be used with object names, nationality names, animal names, names of substances and probably with other types of nouns as well. We conclude that in (Standard) Dutch definite articles with value [−R, ι] are not subject to selectional or distributional restrictions.

8.5.2   Distributional and selectional properties of *de/het*[+R, +count, −pl]

The selectional properties of definite articles introducing kind-referential DPs are rather complicated. We will see that there is considerable variation among local varieties with regard to the common nouns that can be selected by such definite articles (cf. 8.5.2.2).

8.5.2.1 *Standard Dutch*
Speakers of Standard Dutch accept sentences such as (68) (cf. chapter 6).

  (68) a. <u>*De ijsbeer*</u>   *wordt met uitsterven bedreigd.*
          the polar bear is   with extinction threatened

        b. *De Hollanders hebben <u>de dodo</u> uitgeroeid.*
          the Dutchmen have   the dodo exterminated
          'The Dutch exterminated the dodo.'

        c. *Het uitsterven van <u>de ijsbeer</u>   lijkt   onafwendbaar.*
          'The extinction of   the polar bear seems inevitable.'

Kind-referring DPs like those in (68) can be used in other sentences besides those with kind predicates. Such DPs occur in characterizing sentences as well (cf. chapter 3). This is illustrated in (69).

  (69) a. <u>*De ijsbeer*</u>   *leidt een zwervend bestaan.*
          'The polar bear leads a   roving   life.'

        b. *De Hollanders haatten <u>de dodo</u>.*
          'The Dutchmen hated   the dodo.'

        c. *De poten van <u>de ijsbeer</u>   zijn sterk.*
          'The paws of   the polar bear are strong.'

So, singular count DPs introduced by definite articles can receive kind readings in subject position, direct object position and in the complement position of the preposition *van* ('of'). This illustrates that Standard Dutch *de/het*[+R, +count, −pl] has a free syntactic distribution.

8.5.2.2 *Local varieties of Dutch*

8.5.2.2.1 *Syntactic properties.*   In most of the local varieties investigated in chapter 5, definite singular DPs can receive kind readings (cf. section 5.5.3.1.2 and section 5.5.3.3.2, table 5.19 for the presentation of the results). There is only one variety in which this is impossible: the (Groningen) dialect of Uithuizen. In this variety sentences like (70) as well as sentences like (71) are unacceptable.

(70) a. *De mol is blind.*
          'The mole is blind.'
      b. *De Nederlander is zuinig.*
          'The Dutchman   is thrifty.'

(71) a. *De telefoon   is uitgevonden door een Schot.*
          the telephone is invented   by   a   Scotsman
          'The telephone was invented by a Scotsman.'
      b. *Die Schotse leraar heeft de telefoon   uitgevonden.*
          that Scottish teacher has   the telephone invented
          'That Scottish teacher invented the telephone.'
      c. *Ik heb hier een foto   van de uitvinder van de telefoon.*
          I   have here a   picture of   the inventor   of   the telephone
          'I have a picture of the inventor of the telephone here.'

We can account for this by assuming that the Uithuizen dialect does not possess a definite article with the features [+R, +count, –pl].

In most of the varieties of Dutch (and Frisian) investigated here, things are more complicated than in the Uithuizen dialect. There are 15 local varieties in which characterizing sentences like the ones in (70) are unacceptable, whereas at least one of the kind predicate sentences in (71) is acceptable.[23] How can this be accounted for? Some revealing results for eight varieties are presented in table 8.5. These eight varieties belong to the group of 15 varieties in which sentences like (70) are unacceptable. In table 8.5, the scores for sentences such as (71) are compared to the judgements concerning the sentences in (72), in which bare plurals are used.

(72) a. *Telefoons   zijn uitgevonden door een Schot.*
          telephones are invented   by   a   Scotsman
          'Telephones are invented by a Scotsman.'
      b. *Die Schotse leraar heeft telefoons   uitgevonden.*
          that Scottish teacher has   telephones invented
          'That Scottish teacher invented the telephone.'

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23.   This is the case in the varieties spoken in: Norg (no. 3), Genemuiden (no. 4), Nijverdal (no. 6), Oldebroek (no. 7), Scherpenzeel (no. 9), Wouwse Plantage (no. 15), Montfort (no. 16), Val-Meer (no. 18), Gingelom (no. 19), Zandvliet (no. 22), Nieuwkerken-Waas (no. 23), Herdersem (no. 24), Maldegem (no. 25), Diksmuide (no. 28) and Adinkerke (no. 29).

c. *Ik heb hier een foto   van de uitvinder van telefoons.*
I   have here a   picture of the inventor   of   telephones
'I have a picture of the inventor of the telephone here.'

From the table the following picture emerges: definite articles are acceptable in sentences such as (71a), (71b) and (71c) if empty determiners are (relatively) unacceptable in the same positions (cf. (72a), (72b), (72c)).

To describe the data presented in table 8.5 we can assume that varieties like those presented in this table possess a definite article selecting singular counts under kind readings (i.e., *de/het*[+R, +count, –pl]), but the resulting DPs have to fulfil an additional condition: they must be the 'optimal' output. By optimal, we mean that there is no competing well-formed output.[24] This condition is fulfilled if the empty determiner is unacceptable in the same position.[25]

An interesting question is whether this can be related to the hypothesis that the grammar consists of two components (cf. recent research by Hans Broekhuis, for example Broekhuis 2006): there is a 'derivational' component, which generates a set of syntactic structures. A second component determines the grammatical output by the evaluation of these structures.[26] This gives rise to the following hypothesis: if a language has a definite article of the type [+R, +count,–pl], sentences like the ones in (71) are generated, but whether these sentences are grammatical depends on the evaluation component of the grammar. Only if the corresponding sentence(s) with empty determiner(s) is (are) ill-formed, which means that there is no competing grammatical output, will the sentences in (71) be acceptable.

Let us now consider the questionnaire data for the 15 varieties referred to above and in note 23 in more detail. Table 8.6 presents acceptability judgements of (71b), in which a plural definite article is used, and compares them to the judgements of (72b), in which an empty determiner occurs. In both sentences, the relevant DP occurs in the direct object position of the kind predicate *uitvinden*.

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24. This idea is reminiscent of Chierchia's Avoid Structure. However, an important difference between Chierchia's proposal and ours is that we do not assume that the condition that definite DPs must be the 'optimal' output is a universal principle.

25. Recall from 8.4.1.3 that the hypothesis to account for the fact that empty determiners are unacceptable in certain syntactic positions is that such determiners are not capable of identifying a DP as a topic.

26. Frameworks differ in the attention they devote to the components. The focus of research within the Minimalist Program is on the derivational component, while Optimality Theory has particularly concentrated on the 'evaluational' aspect of the grammar (cf. Broekhuis 2006).

Table 8.5 Acceptability judgements for the sentences in (71) and (72)

variety → sentence→	Norg (no. 3)	Genemuiden (no. 4)	Nijverdal (no. 6)	Scherpenzeel (no. 9)	Montfort (no. 16)	Zandvliet (no. 22)	Nieuwkerken-Waas (no. 23)	Diksmuide (no. 28)
(71a)	5	5	5	5	5	5	5	5
(72a)	1	1	1	2	1	1	2	1
(71b)	5	5	5	5	5	5	5	5
(72b)	1	1	1	1	1	1	1	1
(71c)	1	5	1	5	5	5	5	5
(72c)	5	1	5	1	1	1	1	1

Table 8.6 Acceptability judgements for the sentences (71b) and (72b)

variety → sentence↓	3	4	6	7	9	15	16	18	19	22	23	24	25	28	29
(71b)	5	5	5	4	5	5	5	5	5	5	5	5	5	5	5
(72b)	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1

Table 8.7 Acceptability judgements for the sentences (71a) and (72a)

variety → sentence ↓	3	4	6	7	9	15	16	18	19	22	23	24	25	28	29
(71a)	5	5	5	3	5	5	5	5	4	5	5	5	5	5	5
(72a)	1	1	1	4	2	1	1	3	4	1	2	5	3	1	4

Table 8.8. Acceptability judgements for the sentences (71c) and (72c)

variety → sentence ↓	3	4	6	7	9	15	16	18	19	22	23	24	25	28	29
(71c)	1	5	1	3	5	5	5	5	2	5	5	2	5	5	5
(72c)	5	1	5	2	1	5	1	3	4	1	1	1	3	1	3

These data are in agreement with the hypothesis that the definite singular in (71b) is judged acceptable because the empty determiner (cf. (72b)) is problematic in this position.

In tables 8.7 and 8.8, acceptability judgements for the pairs of sentences (71a)/ (72a) and (71c)/(72c) are presented.

Most of the results presented in tables 8.7 and 8.8 can be accounted for by the hypothesis presented above. Note that some informants hesitate whether or not a sentence is acceptable. An example is the informant for the variety spoken in Old-ebroek (no. 7, cf. tables 8.6, 8.7, 8.8). It is, of course, very difficult to account for such judgements. On the other hand, such data can hardly be taken as reliable evidence against our analysis. More problematic are the data for Wouwse Plantage (no. 15), Gingelom (no. 19), Herdersem (no. 24) and Adinkerke (no. 29). The respondent from Wouwse Plantage considers (71c) as well as (72c) fully acceptable (cf. table 8.8). Accordingly, we cannot maintain that there is a one-to-one relation between the (un)acceptability of (71c) and the (un)acceptability of (72c). The same point can be made for the results for Gingelom, Herdersem and Adinkerke in table 8.7.

Note, however, that the speakers from Wouwse Plantage, Gingelom, Herder-sem and Adinkerke do find one or two of the sentences in (72) unacceptable. To account for the relevant data we could assume that it is enough if the use of bare plurals leads to an unacceptable result in at least some of the argument positions of kind predicates for sentences like (71) to be acceptable.

We can make the following generalizations: the 15 local varieties discussed above, in which sentences like (70), repeated below as (73), are unacceptable possess a definite article of type [+R, +count, –pl]. This implies that the sentences in (73) are generated by the derivation.

(73)   a.   *De mol is blind.*
       b.   *De Nederlander is zuinig.*

However, structures generated by the derivational component are evaluated in a second component of the grammar. In this component, their acceptability is related to the acceptability of competing forms. Only if the competing construction with a bare plural is problematic in argument positions of kind predicate sentences can the definite article of type [+R, +count,–pl] be well-formed in such sentences. Since sentences like (74) are perfectly acceptable in the varieties represented in tables 8.6.–8.8 (as well as in any of the other varieties, cf. chapter 5), the sentences in (73) are predicted to be unacceptable.

(74)   a.   *Mollen zijn blind.*
            'Moles are blind.'
       b.   *Nederlanders zijn zuinig.*
            'Dutchmen   are thrifty.'

In the 15 varieties represented in tables 8.6–8.8, bare plurals are ill-formed in an argument position of a kind predicate or at least in some of the relevant sentences (cf. (72)). This is why definite singulars can be acceptable in such sentences (cf. sentences (71), repeated as (75)).

(75) a. *De telefoon is uitgevonden door een Schot.*
      b. *Die Schotse leraar heeft de telefoon uitgevonden.*
      c. *Ik heb hier een foto van de uitvinder van de telefoon.*

Our description of the data in tables 8.6, 8.7 and 8.8 is summarized in (76).

(76) Some varieties do possess a definite article with value [+R], but the resulting structures are grammatical only if the competing construction with an empty determiner is problematic. This is the case in argument positions of kind predicates. In the relevant varieties, bare plurals are unacceptable in (some of) the relevant positions.

We have now discussed two groups of varieties: in the first group (i.e., in the Uithuizen dialect), definite articles with the features [+R, +count, –pl] do not exist. In the second group of 15 varieties, such articles do exist, but the resulting structures are well-formed only in argument positions of kind predicates. There is a group of 13 varieties that has not been discussed yet. In these local varieties, definite articles can be used in sentences such as (73) as well as in sentences such as (75). We can account for these varieties by assuming that they possess definite articles with the features [+R, +count, –pl] and that the resulting structures are not evaluated in the way that the 15 local varieties referred to above are evaluated. The condition stated in (76) does not apply to these varieties.

8.5.2.2.2 *Semantic selectional properties.*   At the end of the previous section, we pointed out that there are 13 varieties in which sentences such as (77) (cf. (73)), or some of the relevant sentences, are acceptable.[27]

(77) a. %*De mol is blind.*
      b. %*De Nederlander is zuinig.*
      c. %*De stofzuiger   maakt lawaai.*
              the vacuum cleaner makes noise
              'Vacuum cleaners make a lot of noise.'

Recall from 5.5.3.1.2 that informants usually rate sentences like (77b), in which a nationality name is used, higher than sentences like (77a), in which an animal

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27. This is the case in Holwerd, Hellendoorn, Borculo, Eemnes, Blokker, Vlaardingen, Rotterdam, Ellewoutsdijk, Valkenburg, Ternat, Wambeek, Aalter and Klemskerke.

name is used, and they find sentences like (77a) more acceptable than sentences like (77c), in which an object name is used. So, there is a relation between 'animacy' and the acceptability of sentences like (77). The concept of 'animacy' is reflected in languages by a distinction between animate and inanimate categories and between human and non-human categories. Inanimate categories such as vacuum cleaners are lowest in the animacy hierarchy, human categories such as Dutchmen are highest in the hierarchy. Animate categories such as moles are at an intermediate level. We can conclude from the questionnaire study that, on average, informants prefer the use of definite singulars in characterizing sentences like (77) when categories located higher in the animacy hierarchy are used.

We have seen that in a number of varieties there are sharp differences in acceptability. There are informants who judge sentences like (77a) as well as sentences like (77b) (relatively) acceptable and sentences like (77c) (relatively) unacceptable. A second possibility is that sentences like (77b) are (relatively) acceptable while (77a) and (77c) are (relatively) unacceptable. Furthermore, in some varieties each of these sentences is unacceptable and there is one variety in which each of the sentences is acceptable (cf. 5.5.3.1.2).

How can this be accounted for? In section 8.4.1.3, we argued that there is a relation between topicality and kind reference in that a kind-referential noun phrases must be marked as a topic. Yamamoto (1999: 60–67) argues that that there is a strong correlation between animacy and topicality. He refers to Givón (1983), who gives statistical content to the concept of 'topic' by counting the 'continuity' of the appearance of particular noun phrases. Yamamoto discusses two types of discourse measurements to which texts may be subjected: 'referential distance' and 'topic persistence'. The measurement of 'referential distance' counts the number of clauses between the occurrence of a nominal expression and the closest previous appearance of a noun phrase with the same referent. The parameter of 'topic persistence' is measured in terms of the number of subsequent clauses in which a given discourse referent continues to appear without being interrupted by any clauses which do not include the reference to that entity. Following these criteria, Givón examined the topicality propensities of entities in a wide range of natural languages. The results of his studies show that animacy is a significant factor which determines the topicality of noun phrases in discourse. Noun phrases with animate/human reference are more topical than those with inanimate/non-human reference.

Since definite singulars in sentences like (75) and (77) are kind-referential noun phrases and since such noun phrases are usually topics, we predict that animacy can have an impact on acceptability. This is exactly what we have found.

The results of the questionnaire show that in some cases the observed differences in acceptability take on an absolute character. How can such results be dealt with? Adger (2003: 87) observes that "lexical items constrain more than just the

syntactic category of the constituents with which they combine. They also constrain the semantics." He illustrates this with the example sentences in (78).

(78)   a.   Genie intoned the prayer.
        b.   #Genie intoned the mirror.

In sentence (78b), there is a mismatch between the requirements of the verb, and the DP that is merged with it. Adger (2003: 88) represents this by semantic selectional features: "in this case we might say that the sister of the verb *intone* must be [+sayable]. (. . .) [T]he concept that is relevant here is s(emantic)-selectional features". Adger (2003: 89) further assumes that

> "although s[emantic]-selectional features are important for capturing our judgements about unacceptability of sentences, (. . .) Merge itself is blind to these properties (. . .). (. . .) [S]entences which violate some s-selectional requirements will be syntactically well-formed. Our system will generate such sentences, and the rule of semantic interpretation will construct a semantic representation out of them. However, that representation will be semantically anomalous."

If we assume that determiners such as *de* (the-NN) are similar to verbs in having semantic-selectional features, we can deal with absolute differences in acceptability among the sentences presented in (77). Let us assume that in varieties in which sentences like (77a) and (77b) are acceptable and sentences like (77c) are unacceptable, the definite article with value [+R, +count, –pl] has a semantic-selectional feature corresponding to [+animate]. In varieties in which (77b) is acceptable while sentences (77a) and (77c) are unacceptable, the article has a semantic-selectional feature corresponding to [+human]. This feature allows the determiner to combine with nationality names or animal names, but not with object names.

    In varieties in which each of the sentences in (77) is acceptable, the article does not have semantic-selectional features. If such features are absent, the article only has syntactic selectional features and can select any syntactic object fulfilling the syntactic restrictions.

8.5.3   Distributional and selectional properties of *de/het*[+R, +count, +pl]

8.5.3.1   *Standard Dutch*
In chapter 4, we saw that that the acceptability of sentences like (79) is subject to inter-speaker variation.

(79)   a. %*De olifanten* *sterven uit*.
          the elephants die   out
          'The elephants are dying out.'

    b. %*De mens   heeft <u>de mammoeten</u> uitgeroeid.*[28]
          the human has   the mammoths exterminated
          'Man has exterminated the mammoths.'

    c. %*Zorgde de moderne mens   voor het uitsterven van <u>de</u>*
          caused the modern human PREP the extinction of   the
          <u>*Neanderthalers(. . .)?*</u>[29]
          Neanderthal
          'Was the extinction of the Neanderthal caused by modern man?'

According to, for example, ter Meulen (1995) sentence (79a) is acceptable, but Haeseryn et al. (1997) find this sentence type "dubious". This variation can be described by assuming that there are two varieties of Standard Dutch: one variety (i.e., the variety of Haeseryn et al.) does not have a definite article with the feature bundle [+R, +count, +pl]. Another variety (i.e., the variety of ter Meulen 1995) does have a definite article with [+R, +count, +pl]. The distribution of *de/het*[+R, +count, +pl] is not restricted to a number of syntactic positions. The latter point is illustrated in (79), in which the relevant DPs appear in different positions.

8.5.3.2   *German and English*

In chapter 7, we discussed German sentences such as (80a). According to Longobardi (1994: 653), such sentences are acceptable under characterizing readings in *many* varieties of German. This leaves open the possibility that there is interspeaker variation and that some speakers find (80) unacceptable.

(80)   a.   (%) *Die Biber   bauen Dämme.*
               the beavers build dams
               'Beavers build dams.'

        b.   (%) *Die Elefanten   sterben aus.*
               the elephants die   out
               'The elephants are dying out.'

If this inter-speaker variation actually exists, we have to assume that there are two varieties of German. One variety has a definite article of the type [+R, +count, +pl]; the other variety does not possess such an article. However, the question is whether evidence can be found that the latter variety does exist. I consulted two native speakers of German, who both find the sentences in (80) acceptable. The same judgement can be found in ter Meulen (1995: 356) and Krifka (2001).

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28. This sentence originates from http://home.hetnet.nl/~genesis/Deel2/Mammoets5.htm (July 2006).

29. This sentence originates from www.sesha.net/eden/oa_mr.asp (July 2006).

Ter Meulen claims that sentences like (81) and (82) are unacceptable in English.

(81)   *The elephants have valuable teeth.

(82)   *The elephants are dying out.

This can be dealt with by assuming that English does not have a definite article of the type [+R, +count, +pl].

8.5.3.3   *Local varieties of Dutch*

Let us examine the acceptability of characterizing sentences like (83) in local Dutch varieties. The results presented in section 5.5.3.1.4 (cf. table 5.16) show that there are seven varieties in which each of the sentences in (83) is (more or less) unacceptable.[30] Let us tentatively account for this by assuming that these varieties do not possess *de/het*[+R, +count, +pl].

(83)   a.   *De   mollen zijn blind.*
               'The moles   are blind.'
        b.   *De Nederlanders zijn zuinig.*
               the dutchmen   are thrifty
               'Dutchmen are thrifty.'
        c.   *De stofzuigers   maken lawaai.*
               the vacuum cleaners make   noise
               'Vacuum cleaners make a lot of noise.'

We found that, on average, sentences like (83b) were more acceptable than (83a) and that sentences like (83a) are more acceptable than sentences like (83c). This result is expected from the discussion in 8.5.2.2, where we stated that kind-referential DPs are topics and that in general noun phrases with animate or human reference are more topical than those with inanimate or non-human reference.

Again, this trend takes on an absolute character in some varieties. This can be dealt with by making use of semantic-selectional features (cf. section 8.5.2.2.2). There are varieties in which (83b) is (relatively) acceptable, while (83a) and (83c) are unacceptable. In such varieties, the definite article of type [+R, +count, +pl] has a semantic-selectional feature corresponding to [+human]. This feature allows the relevant article to combine only with nationality names. Secondly, there are varieties in which (83a) and (83b) are both acceptable, while (83c) is unacceptable. In such varieties, the article can be assumed to have a semantic-selectional feature [+animate]. This feature allows the relevant article to combine with nationality names or animal names, but not with object names.

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30.   This is the case in the varieties spoken in Uithuizen, Norg, Eemnes, Valkenburg, Ternat, Diksmuide and Adinkerke.

Furthermore, there are varieties in which each of the sentences in (83) is acceptable. In this group of varieties, the article does not have semantic-selectional features. If such features are absent, the relevant article only has syntactic selectional features and can select any syntactic object fulfilling the syntactic restrictions.

Let us now compare the acceptability of definite plurals in characterizing sentences like the ones in (83) to sentences with kind predicates, which are presented in (84).

(84)   a.   *De telefoons   zijn uitgevonden door een Schot.*
            the telephones are invented   by   a   Scotsman
            'The telephone was invented by a Scotsman.'
       b.   *Die Schotse leraar   heeft de telefoons   uitgevonden.*
            that Scottish teacher has   the telephones invented
            'That Scottish teacher invented the telephone.'
       c.   *Ik heb hier een foto   van de uitvinder van de telefoons.*
            I   have here a   picture of the inventor of the telephones
            'I have a picture of the inventor of the telephone here.'

Recall that there are seven varieties in which the sentences in (83) are unacceptable (cf. note 30). In six of these varieties the sentences in (84) are unacceptable as well. This can be easily accounted for by assuming that these six varieties do not possess *de/het*[+R, +count, +pl]. In the seventh variety (i.e., the local variety spoken in Ternat), sentences (84a) and (84c) are relatively acceptable. These sentences are assigned the score '4'. The informant for this variety assigns the score '3' to (85a) and sentences (85b) and (85c) receive the score '1'. So, the informant from Ternat finds bare plurals (relatively) unacceptable in (some) argument positions of kind predicates. On the basis of the discussion in 8.5.2.2.1, we predict that the [+R, +count, +pl] definite article can be used in kind predicate sentences, even though characterizing sentences like those in (83) are unacceptable.

(85)   a.   *Telefoons zijn uitgevonden door een Schot.*
       b.   *Die Schotse leraar heeft telefoons uitgevonden.*
       c.   *Ik heb hier een foto van de uitvinder van telefoons.*

8.5.4   Distributional and selectional properties of *de/het*[+R, −count, −pl]

8.5.4.1   *Standard Dutch*
In chapter 6, we reported that the acceptability of sentences such as (86), in which a definite mass DP is used in the subject position of a kind predicate, is subject to inter-speaker variation.

(86) %*De dopheide is in dit gebied bijna   uitgestorven.*
       the heather   is in this area   nearly extinct
       'In this area, heather is nearly extinct.'

Sentence (87) is not subject to inter-speaker variation. Speakers agree that this sentence is unacceptable (apart from contrastive contexts, cf. chapter 6).

(87) *#De melk is wit.*
　　 the milk is white

Recall from chapter 6 that speakers of Dutch agree that a DP introduced by a definite article can receive a kind reading in sentences like (88).

(88) *Vlaamse monniken hebben %(het) bier uitgevonden.*
　　 Flemish monks　 have　　 (the) beer invented
　　 'Flemish monks invented beer.'

We cannot deal with this fact by assuming that in this particular syntactic position a definite article is acceptable under a kind reading. The problem is that in (89) the DP is the direct object of the sentence (and receives a kind reading) as well.

(89) *Ik haat (#de) karnemelk*
　　 I　 hate (the) buttermilk
　　 'I hate buttermilk.'

Yet, speakers accept the use of a definite article under a kind reading in (89).

How can these data be accounted for? Following the same line of reasoning as before, we assume that Standard Dutch has a definite article of the type [+R, –count, –pl]. This implies that each of the structures with the definite articles in (86)–(89) is generated. Again, the resulting structures are only grammatical in argument positions of kind predicates. In 8.5.2.2.1, we accounted for similar data by assuming that it is possible for structures generated by the derivational system not to be grammatical. The grammaticality of definite articles is related to the acceptability of competing structures with empty articles. Definite articles like those in (86) and (88) can be grammatical, since competing structures with empty determiners appear to be problematic in kind predicate sentences (cf. for example (88)).

8.5.4.2　*German and English*
Longobardi (1994: 653) claims that in many varieties of German sentences like (90) are acceptable.

(90) *%Die Milch ist weiß.*
　　 the milk is white

In this respect German differs from Dutch, since the Dutch sentence in (87), which is similar to (90), is definitely unacceptable.

Some other relevant German examples can be found in (91), (92) and (93).

(91) *Die Bronze wurde bereits 3000 v. Chr. erfunden.*
　　 the bronze was　 already 3000 B.C.　 invented
　　 'The bronze was already invented in 3000 B.C.'

(92) *Flämische Mönche haben das Bier erfunden.*
       Flemish   monks   have   the beer invented
       'Flemish monks invented beer.'

(93) %*Mein Bruder mag den Wein.*
        my   brother likes the wine
        'My brother likes wine.'

Sentence (91) originates from Krifka (2001). According to Krifka, this sentence is acceptable in German. Krifka[31] reports that the acceptability of (93) is subject to inter-speaker variation.

   These data can be accounted for by assuming that German and Dutch differ in that there is a variety of German which possesses a definite article [+R, –count, –pl] which is not subject to the restriction that the resulting DP must be the optimal output: in this variety (or in these varieties), sentences such as (90) and (93) are acceptable, even though mass DPs with empty determiners have not been reported as problematic in characterizing sentences.

   In English, definite mass DPs are unacceptable under kind-referential readings. A native speaker of English reports that even example (94c), in which a definite mass DP occurs in the direct object position of a kind predicate, is unacceptable. In Dutch, this position is the only context in which kind-referential definite mass DPs are acceptable and not subject to inter-speaker variation. We conclude that English does not possess the article *de/het*[+R, –count, –pl].

(94) a. #The milk is white.
      b. #The bronze was invented already 3000 B.C.
      c. #Flemish monks invented the beer.
      d. #My brother likes the wine.

8.5.4.3 *Local varieties of Dutch*

In most varieties of Dutch, sentences like those in (95) are unacceptable (cf. 5.5.3.2).

(95) a. *Het bier is gezond.*
             the beer is healthy
             'Beer is healthy.'
      b. *Het goud is hard en   zwaar.*
             the gold is hard and heavy
             'Gold is hard and heavy.'

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31. Personal communication.

There are only two local varieties in which sentences such as (95) are intermediately acceptable.[32] In one of these two varieties (viz. the one spoken in Hellendoorn), the sentences in (96) are acceptable as well. We can conclude that this variety has a definite article of the type [+R, –count, –pl], which does not have to fulfil further conditions.

(96)   a.   *De koffie is uitgevonden door de Arabieren.*
            the coffee is invented   by   the Arabs
            'Coffee was invented by the Arabs.'
      b.   *Die Duitse banketbakker heeft de marsepein uitgevonden.*
            that German confectioner has   the marzipan   invented
            'That German confectioner invented marzipan'
      c.   *Hij vertelde een verhaal over de uitvinder van de marsepein.*
            he told   a   story   about the inventor of   the marzipan
            'He told a story about the inventor of marzipan.'

In the other variety (i.e., the one spoken in Aalter), (96b) and (96c) are (relatively) acceptable, although (96a) below is judged unacceptable. The latter finding is unexpected. However, note that although the informant from Aalter rates three of the four relevant characterizing sentences from the questionnaire (cf. (95)) relatively acceptable, he judges one sentence (viz. (95b)) fully unacceptable. So, there are some unsystematic exceptions to the generalization that the relevant speaker in general judges sentences such as (95) and (96) to be acceptable and that his dialect possesses a definite article of the type [+R, –count, –pl].

There are seven local varieties in which sentences such as (95) as well as sentences such as (96) are (relatively) unacceptable.[33] This can easily be accounted for by assuming that these dialects do not possess a [+R, –count, –pl] definite article (or do possess a marginally grammatical definite article of this type).

There are 20 local varieties in which the sentences in (95) are (relatively) unacceptable, whereas the sentences in (96) or some of these sentences are acceptable. We assume that in these varieties the definite article of type [+R, –count, –pl] does exist. Among these varieties, there are 14 varieties in which one, two or all of the sentences in (39), repeated in (97), are unacceptable or less acceptable than the sentences in (96).[34]

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32.   These are the varieties spoken in Hellendoorn and Aalter.

33.   This is the case in the varieties spoken in Uithuizen, Norg, Scherpenzeel, Wouwse Plantage, Valkenburg, Gingelom and Diksmuide.

34.   This is the case in the varieties spoken in Genemuiden, Nijverdal, Oldebroek, Eemnes, Blokker, Vlaardingen, Rotterdam, Ellewoutsdijk, Montfort, Ternat, Zandvliet, Nieuwkerken-Waas, Klemskerke and Adinkerke.

(97)   a.   *Koffie is uitgevonden door de Arabieren.*
       b.   *Die Duitse banketbakker heeft marsepein uitgevonden.*
       c.   *Hij vertelde een verhaal over de uitvinder van marsepein.*

For these varieties, the (relative) acceptability of the sentences in (96) can be related to the sentences in (97): the sentences in (96) can be assumed to be acceptable since the competing structures with empty determiners are problematic in an argument position of a kind predicate. In the remaining six varieties, the sentences in (97) are fully acceptable.[35] It is not clear why in these dialects the sentences in (96) should be acceptable as well (whereas the sentences in (95) are not acceptable). One way to understand such judgements is that the dialect intuitions of these informants are influenced by their Standard Dutch intuitions. In Standard Dutch, sentences like (96b) and (96c) are absolutely acceptable. Their acceptability is related to the fact that a proportion of speakers of Standard Dutch do not accept the sentences in (97b) and (97c). Probably, some dialect speakers are influenced by Standard Dutch intuitions: they consider (some of) the sentences in (96) acceptable in their local varieties as well, even though the sentences in (97) are not unacceptable in their dialects.

8.6   Final remarks

This chapter has offered a detailed inventory of distributional and selectional properties of empty determiners and definite articles. Our description is based on the assumption that in the languages under consideration, argument noun phrases are headed by a determiner (empty or non-empty). We have argued against alternative approaches presented by Longobardi and Chierchia.

On the basis of the semantic and selectional properties of determiners, nine types of empty determiners can be distinguished. A language does not necessarily have all of these determiners. Standard Dutch, for example, does not have empty singular count determiners under kind readings (i.e., empty determiners of the type [+R, +count, –pl]). This accounts for the fact that singular counts without overt determiners do not receive such readings.

The selectional properties of definite articles are more complicated. In chapter 5, we found that in many local varieties of Dutch and Frisian kind-referential definite articles are only compatible with a restricted set of common nouns. Some are acceptable only with nationality names, for instance. This can be explained by

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35. This is the case in the varieties spoken in Holwerd, Borculo, Val-Meer, Wambeke, Herdersem and Maldegem.

the relation between kind reference and topicality. We have claimed that kind-referential DPs are topics and that noun phrases with animate or human reference are more topical than those with inanimate or non-human reference. This means that we expect kind-referential definite articles to be more acceptable with animate or human nouns. In some cases, this trend takes on an absolute character. This was accounted for by semantic-selectional features.

Another observation discussed in this chapter is that in a number of varieties kind-referential DPs introduced by definite articles cannot be used in character-izing sentences, but are acceptable in kind predicate sentences. We have proposed that there is a relation between this observation and the fact that empty determiners are in many cases problematic in such sentences. We have suggested that the relevant varieties do have kind-referential definite articles, but they have to fulfil an additional condition: they must be the 'optimal' output, i.e., competing struc-tures must be problematic. This is the case in kind predicate sentences: in most of the relevant cases empty determiners are problematic in such sentences.

CHAPTER 9

Conclusions and issues for future research

9.1 Summary of the conclusions

9.1.1 Conclusions about the description of genericity in the literature

The first part of this book discussed the description of genericity in the (formal) semantic literature and in some traditional grammars of Dutch. The following main conclusions were drawn:

• Habitual sentences cannot be treated on a par with characterizing sentences. One contrast between habitual and characterizing sentences is that indefinite singulars in the direct object position of habituals necessarily take a wide scope reading. This can be accounted for by assuming that the habitual quantifier HAB deviates from the generic quantifier GEN in not having (potentially) sentential scope (cf. also Rimell 2004). This was made more concrete by assuming that HAB takes scope from its position in the specifier of a projection we referred to as F2P. Indefinite singulars are treated as elements with quantificational force of their own: they undergo Quantifier Raising to adjoin to specifier positions higher in the tree than F2P. From this position, they take scope over HAB.

• Cohen (2001) observes that sentences with indefinite singulars such as *A man doesn't cry* attribute definitional properties to indefinite singulars. We have argued in favour of Greenberg's (2002) account of the subtle semantic contrasts between characterizing sentences with indefinite singulars and sentences with bare plurals (like *Men don't cry*). Greenberg assumes that the two types of sentences have the same basic semantic structure, but differ in the choice of accessible worlds where the generalizations are evaluated. In the case of sentences like *A man doesn't cry*, the accessible worlds are restricted to worlds in which every man has the 'in virtue of' property, *being tough*.

• We have made the assumption that kinds and objects play the same semantic role (namely both correspond to entities). This only makes sense if kinds and objects are similar from the perspective of the syntax-semantics interface and if the same strategies can be used to attribute properties to both kinds and objects. Sentences such as *Every rhino is threatened with extinction* illustrate that quantificational elements can range over sets of kinds in the same way that they can range

over sets of objects. We showed that such sentences can be represented by assuming that it is possible for common nouns like *rhino* to refer to sets of kinds. Under this assumption, we expect determiners and other (quantificational) elements to interact with taxonomic common nouns in the same way as with common nouns referring to sets of objects.

• In episodic sentences such as *In Africa, I filmed <u>the African elephant</u>*, there is a mismatch between the predicate, which does not normally accept kinds and the direct object noun phrase, which denotes a kind. Such mismatches can be resolved by assuming a realization relation. Cohen (1999: 46) argues that the sets of instances which are relevant for the interpretation of a sentence vary from case to case. Cohen refers to each realization relation as a *coordinate* C. Cohen does not discuss episodic sentences such as *In Africa, I filmed the African elephant*. We have made the assumption that in such sentences C stands for the *representative object coordinate*. This means that C($\uparrow$**afrikaanse-olifant**)(x) holds just in case *x* is a representative object of the kind corresponding to *Afrikaanse olifant* ('African elephant').

9.1.2 Conclusions of the corpus and questionnaire studies

In the second part of this book, a number of corpus- and questionnaire-based studies were presented and discussed. The following main conclusions were drawn:

• One corpus study showed that different lexical semantic classes lead to different frequencies of types of DPs. Definite and indefinite singulars are used more frequently with animal names than with nationality names; definite plurals appear more frequently with nationality names.

• Another study revealed some significant differences between three highly frequent common nouns. Definite and indefinite singulars appear more frequently with *mens* ('human/man') than with *man* ('man') and *vrouw* ('woman'). The opposite result was found for bare plurals. The largest difference between *mens* on the one hand and *man* and *vrouw* on the other was found for definite singulars. This result was related to the distinction between natural kind terms and nominal kind terms. While *mens* falls in the category of natural kind terms, *man* and *vrouw* are nominal kind terms.

• The observation that lexical semantic classes are highly relevant to the study of generics was confirmed by the questionnaire results. A number of informants rate definite plurals higher with nationality names than with animal names. This is in agreement with the fact that in corpora definite plurals are used more frequently with nationality names than with animal names.

• Another result from the questionnaire study is that according to a considerable number of informants definite mass DPs are more acceptable in kind predicate

sentences than in characterizing sentences. A similar, but less strong result was found for definite singular counts.

9.1.3   Conclusions regarding issues in the syntax-semantics interface

The third part of this book was devoted to issues in the syntax-semantics interface. The main conclusions can be summarized as follows:

- A number of arguments were given in favour of the conclusion that Dutch (as well as English) bare plurals do not unambiguously refer to kinds, but are ambiguous between a kind-referential and a variable-introducing reading. This accounts for the ambivalent behaviour of bare plurals. An example of this behaviour is that the acceptability of bare plurals with kind predicates is subject to inter-speaker variation. A second important observation is that bare plurals are ill-formed in the direct object position of kind predicates, but they can be used in the direct object position under characterizing readings. Thirdly, bare plurals do not necessarily refer to entities that are well-established as kinds. A last argument is that bare plurals do not receive representative object interpretations in episodic sentences.

- Some of the argumentation in favour of the claim that bare plurals are ambiguous could not be applied in a straightforward way to bare mass terms. Yet, the most plausible interpretation of the evidence is that bare mass terms are ambiguous as well. Crucially, there are speakers who do not accept kind readings of bare mass terms in direct object position or in the complement position of a preposition. At the same time, sentences in which bare mass arguments receive a characterizing interpretation are grammatical beyond doubt. As subtle as the relevant observations may be, they cannot be accounted for if we assume that bare mass terms unambiguously refer to kinds.

- The influential theory of Longobardi (1994) leads to a number of problems and open questions. A first problem concerns Longobardi's assumption that expletive articles are licensed only if they express grammatical features, or as a last resort. He assumes that this is a "principle of Universal Grammar". Such a principle does not predict that in a number of varieties of Dutch the acceptability of DPs with definite articles is influenced by the lexical semantic class of the common noun. We have shown that this cannot be accounted for straightforwardly by claiming that definite articles are acceptable only if they spell out morphological features, or as a last resort. Other difficulties are related to Longobardi's account of subject-object asymmetries in terms of Lexical Government and his assumption that Germanic bare arguments do not have to fulfil this condition as a consequence of raising from N° to D° at LF. One problem for the latter hypothesis is that there is no (substantial) empirical or other evidence that Dutch or English has *overt* raising from N° to D° triggered by the constraints suggested by Longobardi (1994).

If there had been such evidence, it would have been reasonable to assume that, under some well-defined conditions, N-to-D raising can take place at LF. Furthermore, English and Dutch bare plurals are (relatively) unacceptable in the direct object position of kind predicates (cf. *??The Sumerians invented pottery wheels*). We have shown that Longobardi's (1994) approach cannot account for the relevant data in a straightforward way.

• Some arguments were presented against Chierchia's idea that Germanic languages differ from Romance languages in that Germanic arguments are not necessarily introduced by (empty or non-empty) determiners. Chierchia accounts for the semantic ill-formedness of characterizing sentences like #*The beavers build dams* by assuming the economy principle 'Avoid Structure'. The crucial point is that sentences like *Beavers build dams* (can) receive a characterizing reading. Chierchia claims that when the latter option is available, it must be chosen over one which involves projecting D. Yet, a number of speakers of Dutch (and German) accept the use of definite articles in characterizing sentences like *De bevers bouwen dammen* ('The beavers build dams'). Such data contradict Avoid Structure. Possible assumptions to account for the German and English data are that Avoid Structure is active only in some varieties of Dutch and German or that some varieties have the same setting of the Nominal Mapping Parameter as Romance languages, while other varieties are similar to English. However, we argued that these suggestions have their own drawbacks.

• We offered a detailed inventory of distributional and selectional properties of empty determiners and definite articles, based on the assumption that in the languages under consideration, argument noun phrases are headed by a determiner (empty or non-empty). On the basis of semantic and selectional properties of determiners, nine types of empty determiners can be distinguished. A language does not necessarily have all of these determiners. For example, Standard Dutch does not have an empty singular count determiner with a kind reading. Thus, we can account for the fact that singular counts without overt determiners do not receive this reading.

• The selectional properties of definite articles are more complicated. We found that in many local varieties of Dutch kind-referential definite articles are only compatible with a restricted set of common nouns, for example, only with nationality names. This can be explained by the relation between kind reference and topicality. We claimed that kind-referential DPs are topics and that noun phrases with animate or human reference are more topical than those with inanimate or non-human reference. This means that we expect kind-referential definite articles to be more acceptable with animate or human nouns. In some cases, animate or human nouns are obligatory in this context. This was accounted for by semantic-selectional features. For example, an article with a feature corresponding to [+human] cannot be combined with an animal name.

- Another observation about kind-referential DPs with definite articles is that there are a number of varieties in which they cannot be used in characterizing sentences, but are acceptable in an argument position of a kind predicate. We proposed that there is a relation between this observation and the fact that empty determiners are in many cases problematic in such positions. This suggests that the relevant varieties do possess definite articles introducing kind-referential DPs, but they have to fulfil an additional condition: they must be the 'optimal' output, i.e., competing structures with empty determiners have to be problematic. A hypothesis to account for the unacceptability of empty determiners is that such determiners are not capable of identifying a DP as a topic.

9.2   Some issues for future research

This book has provided answers to a number of questions, but leaves a number of other questions for subsequent study. The following issues are left for future research:

- Definite plurals, such as *de bevers* ('the beavers') and definite mass DPs, such as *de melk* ('the milk') are relatively marked in kind predicate and characterizing sentences. We have found that although a number of speakers consider characterizing sentences such as *De bevers bouwen dammen* ('The beavers build dams') acceptable, there are also speakers who do not accept them. Definite mass DPs are subject to less inter-speaker variation than definite plurals: characterizing sentences like *De melk is wit* ('The milk is white') are unacceptable for almost every speaker of Dutch. However, there are contexts and sentences in which such DPs are acceptable. For example, a sentence like *De witte wijn is duur dit jaar* ('The white wine is expensive this year') is acceptable. The conditions under which definite mass and plural DPs are acceptable in characterizing and kind predicate sentences are not fully understood. More research is needed to clear up this point.
- A related issue is that sentences such as *De bevers bouwen dammen* (cf. above) are ambiguous between two interpretations, which can be extremely difficult to distinguish. In the kind-referential interpretation, *de bevers* refers to a kind. In a second interpretation, *de bevers* refers to a contextually determined group of beavers. However, a speaker can assume that this group is the group of all beavers living in the actual world. Note that there is an important semantic difference between the two readings in that the latter is a purely extensional interpretation. The question is, however, whether or not language users can make such subtle distinctions. An interesting question is whether this problem can be neutralized by

using more sophisticated verbal and non-verbal questionnaire techniques. More research needs to be done in this area.

•   Future research could extend this study to include other noun phrase types, like brand names, plant names, substance names, names for inhabitants of cities or villages and names of political groups. Another suggestion is that it would be interesting to incorporate other types of predicates or sentences (for example quantificational predicates like *zeldzaam* ('rare') or representative object sentences such as *In Alaska filmden we de grizzly beer* ('In Alaska, we filmed the grizzly')). Furthermore, future research could include more syntactic positions and differentiate between different types of Prepositional Phrases. Hopefully, such research will help to establish clear patterns in the distributional restrictions of noun phrases (in particular bare noun phrases) in Germanic languages.

•   The questionnaire study presented in this book focuses on intuitions about the acceptability of sentence types in local or regional varieties. More research needs to be done to shed light on the variation among Standard Dutch speakers (and in general among speakers of the same language) in their judgements about the acceptability of different types of characterizing and kind predicate sentences.

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